



(REVIEW ARTICLE)



Antibacterial spectrum of medicinal plants: A review

Mahdi M. Thuwaini *

Department of Pathology, College of Medical and Healthy Techniques, Southern Technical University, Basrah, Iraq.

GSC Biological and Pharmaceutical Sciences, 2023, 24(02), 239–284

Publication history: Received on 09 July 2023; revised on 19 August 2023; accepted on 22 August 2023

Article DOI: <https://doi.org/10.30574/gscbps.2023.24.2.0338>

Abstract

Medicinal plants exerted their antibacterial effects through many mechanisms included inhibition of cell wall synthesis, inhibition of cell membrane synthesis, disruption of cytoplasmic membrane, inhibition of bacterial proteins synthesis, inhibition of nucleic acid synthesis, inhibition of energy metabolism, as well as inhibition of bacterial virulence factors. The current review highlighted the medicinal plants with antibacterial activity with their spectrum of action.

Keywords: Medicinal plant; Herbs; Natural, Pharmacology; Antibacterial

1. Introduction

The antibiotic- resistant bacteria in different communities was increased as a result of excessive use of antibiotics [1-11]. Using of medicinal plants represented an alternative choice for natural and synthetic antibacterial drugs in medical practice to avoid the development of multi-drug resistant bacteria[12-15]. Medicinal plants exerted their antibacterial effects through many mechanisms included inhibition of cell wall synthesis, inhibition of cell membrane synthesis, disruption of cytoplasmic membrane, inhibition of bacterial proteins synthesis, inhibition of nucleic acid synthesis, inhibition of energy metabolism, as well as inhibition of bacterial virulence factors [16-20]. The current review highlighted the medicinal plants with antibacterial activity with their spectrum of action.

* Corresponding author: Mahdi M. Thuwaini

Table 1 Antibacterial spectrum of medicinal plants

Plants	Bacterial Spp	Gram-negative	Gram-positive	Antibacterial Spp	References
<i>Achillea santolina</i>				✓	21-22
<i>Adiantum capillus-veneris</i>	✓				23-25
<i>Agrimonia eupatoria</i>	✓	✓			26-29
<i>Agropyron repens</i>				✓	30-31
<i>Ailanthus altissima</i>	✓		✓		34-36
<i>Aihagi graciorum</i>	✓			✓	37-41
<i>Allium cepa</i>			✓	✓	42-47
<i>Allium porrum</i>			✓		48-49
<i>Allium sativum</i>	✓		✓	✓	50-62
<i>Alpinia galangal</i>		✓			63-68
<i>Aithaea officinalis</i>	✓		✓	✓	69-71
<i>Aithaea rosea</i>	✓		✓		72
<i>Annonavia baccifera</i>	✓		✓	✓	73-75
<i>Anoni visnaga</i>	✓		✓	✓	76-78
<i>Anagyris foetida</i>			✓		79-80
<i>Anchusa strigosa</i>	✓		✓	✓	81-82
<i>Anethum graveolens</i>			✓	✓	83-85
<i>Anthemis nobilis</i>	✓		✓		86-89
<i>Anatrhinum majus</i>	✓		✓	✓	90-91
<i>Apium graveolens</i>	✓		✓	✓	92-95
<i>Arachis hypogaea</i>	✓		✓	✓	96-97
<i>Arctium Lappa</i>	✓		✓	✓	98-100
<i>Artemisia campestris</i>	✓		✓	✓	101-102
<i>Arundo donax</i>	✓		✓	✓	103-104
<i>Asclepias curassavica</i>	✓		✓	✓	105
<i>Asparagus officinalis</i>	✓		✓		106-107
<i>Avena sativa</i>		✓			108-109
<i>Bacopa monniera</i>		✓			110-112
<i>Ballota nigra</i>			✓	✓	113-115
<i>Bauhinia variegata</i>	✓		✓	✓	116-117
<i>Bellis perennis</i>			✓	✓	118-121
<i>Benincasa hispida</i>	✓		✓	✓	122-124
<i>Betula alba</i>	✓		✓		125-126
<i>Bidens tripartita</i>	✓		✓		127
<i>Brassica rapa</i>	✓		✓		128-129

2. Conclusion

The development of resistant bacterial strains is one of the major public health problem. Plant extracts have shown inhibitory effect on the growth of wide range of bacteria by many mechanisms. They are represented a good alternative for prevention and treatment of bacterial diseases.

References

- [1] Zangana MM, Al-Dujaily AA and Al- Snafi AE. Evaluation of short course regimen treatment of patients with active pulmonary tuberculosis in saladdin province. *Med J Tikrit Univ* 1998; 4: 13-17.
- [2] Al- Snafi AE, Al saadi AA and Al- Samarrai AM. Bacterial etiology of acute and chronic suppurative otitis media. *Med J Tikrit Univ* 1999; 5: 229-234.
- [3] Barakat SS, Al-Dujaily AA and Al-Snafi AE. Misuse of antimicrobial agents in urinary tract infection in Al- Samawa city. *Med J Tikrit Univ* 2000; 6: 91-95.
- [4] Al- Dujaily AA, Al-Snafi AE and Al-Shahwani SM. Antibiogram profile of neonatal septicemia in the-Qar province *Med J Tikrit Univ* 2000; 352-356.
- [5] Al-Dujaily AA, Al-Snafi AE and Al-Shahwani SM. Antibiogram profile of pharyngotonsillitis pathogens in Hilla City. *Med J Tikrit Univ* 2000; 6: 22-25.
- [6] Al- Snafi AE, Al-Khayat J and Al-Dujaily AA. The antibiogram profile of *Staphylococcus aureus* isolated from different site of human infections in Nassria. *Med J Tikrit Univ* 2000; 325-327 .
- [7] Jalal G, Al-Dujaily AA, Al-Shahwani SM and Al-Snafi AE. Urinary tract infection among pregnant women in Sghospital – Kirkuk. *Med J Tikrit Univ* 2000; 6: 197-202 .
- [8] Al-Snafi AE, Kdir MA and Al-Batat HA. Evaluation of 5 days single and combined treatment of intestinal amebiasis. *Med J Tikrit Univ* 2001; 7(2): 158-162.
- [9] Al- Snafi AE, Anwar SA and Ghazal MR. Antibiotic resistance pattern of methicillin resistant and methicillin sensitive *Staphylococcus aureus* isolate from different infections 2002; 8: 68-71.
- [10] Al-Snafi AE and Hasan KH Rajab. The efficacy of triple and quadruple therapy in peptic ulcer diseases. *Tikrit Journal of Pharmaceutical Sciences* 2005; 1 (1): 7-19.
- [11] Al-Gazi ZS, Al-Snafi AE and Al-Abady FA. Effect of toxoplasmosis and/ or its treatment (sulpadiazine and pyrimetamine) on female rats reproductive performance. *Indian Journal of Pharmaceutical Science & Research* 2016; 6(1): 35-40.
- [12] Al-Snafi AE. Molecular mechanisms of the antimicrobial effect of natural flavonoids against human pathogens. In: *Recent advances in the molecular mechanism of flavonoids*. Edited by K. Pandima Devi, Studium press, India, 2018.
- [13] Al-Snafi AE. Therapeutic properties of medicinal plants: a review of their antibacterial activity (part 1). *International Journal of Pharmacology and Toxicology* 2015; 6(3): 137-158.
- [14] Al-Snafi AE. Medicinal plants with antimicrobial activities (part 2): Plant based review. *Sch Acad J Pharm* 2016; 5(6): 208-239.
- [15] Al-Snafi AE. Antimicrobial effects of medicinal plants (part 3): plant based review. *IOSR Journal of Pharmacy* 2016; 6(10): 67-92.
- [16] Cushnie TP and Lamb AJ. Recent advances in understanding the antibacterial properties of flavonoids. *Int J Antimicrob Agents* 2011; 38: 99–107.
- [17] Otsuka N, Liu MH, Shiota S, Ogawa W, Kuroda T, Hatano T and Tsuchiya T. Anti-methicillin resistant *Staphylococcus aureus* (MRSA) compounds isolated from *Laurus nobilis*. *Biol Pharm Bull* 2008; 31: 1794–1797.
- [18] Gordon NC and Wareham DW. Antimicrobial activity of the green tea polyphenol (-)-epigallocatechin-3-gallate (EGCG) against clinical isolates of *Stenotrophomonas maltophilia*. *Int J Antimicrob Agents* 2010; 36: 129–131.
- [19] Collin F, Karkare S and Maxwell A. Exploiting bacterial DNA gyrase as a drug target: current state and perspectives. *Appl Microbiol Biotechnol* 2011; 92(3): 479–497.

- [20] Haraguchi H, Tanimoto K, Tamura Y, Mizutani K and Kinoshita T. Mode of antibacterial action of retrochalcones from *Glycyrrhiza inflata*. *Phytochemistry* 1998;48:125–129.
- [21] Darwish RM and Aburjai TA. Antimicrobial activity of some medicinal plants against different *Candida* species. *Jordan Journal of Pharmaceutical Sciences* 2011; 4(1): 70-80.
- [22] Al-Snafi AE. Chemical constituents and pharmacological activities of Milfoil (*Achillea santolina*) - A Review. *Int J Pharm Tech Res* 2013; 5(3): 1373-1377.
- [23] Mahmoud MJ, Jawad AL, Hussain AM, Al-Omari M and Al-Naib A. *In vitro* antimicrobial activity of *Salsola rosmarinus* and *Adiantum capillus-veneris*. *Int J of Crude Drug Research* 1989; 27: 14-16.
- [24] Al-Snafi AE. The chemical constituents and pharmacological effects of *Adiantum capillus-veneris* - A review. *Asian Journal of Pharmaceutical Science and Technology* 2015; 5(2): 106-111.
- [25] Singh M, Singh N, Khare PB and Rawat AKS. Antimicrobial activity of some important *Adiantum* species used traditionally in indigenous systems of medicine. *J Ethnopharmacol* 2008; 115: 327-329.
- [26] Khare CP. *Indian medicinal plants, an illustrated dictionary*. Springer Science and Business Media, LLC, 2007.
- [27] Al-Snafi AE. The pharmacological and therapeutic importance of *Agrimonia eupatoria*- A review. *Asian Journal of Pharmaceutical Science and Technology* 2015; 5(2): 112-117.
- [28] Ghaima KK. Antibacterial and wound healing activity of some *Agrimonia eupatoria* extracts. *J Baghdad for Sci* 2013; 10(1): 152-160.
- [29] Petkov V. Bulgarian traditional medicine: A source of ideas for phytopharmacological investigations . *J Ethnopharmacol* 1986; 15: 121-132.
- [30] Watkins F, Pendry B, Sanchez-Medina A and Corcoran Antimicrobial assays of three native British plants used in Anglo-Saxon medicine for wound healing formulations in 10th century. *England. J Ethnopharmacol* 2012; 144(2): 408-415.
- [31] Al-Snafi AE. Chemical constituents and pharmacological importance of *Agropyron repens* – A review. *Research Journal of Pharmacology and Toxicology* 2015; 1 (2): 37-41.
- [32] Hautmann C. and Scheithe K. Fluid extract of *Agropyron repens* for the treatment of urinary tract infections or irritable bladder. Results of multicentric post-marketing surveillance. *Zeitschrift für Phytotherapie* 2000; 21(5): 252-255.
- [33] Zhao CC, Shao JH, Li X, Xu J and Zhang P. Antimicrobial constituents from fruits of *Ailanthus altissima* Swingle. *Arch Pharm Res* 2005; 28(10): 1147-1151.
- [34] Rahman A, Kim EL, and Kang SC. Antibacterial and antioxidant properties of *Ailanthus altissima* swingle leaves extract to reduce foot borne pathogens and spoiling bacteria . *Journal of Food Safety* 2009; 29: 499-510.
- [35] Rahman S, Fukamiya N, Okano M, Tagahara K and Lee KH. Anti-tuberculosis activity of quassinoids. *Chem Pharm Bull (Tokyo)* 1997; 45(9): 1527-1529.
- [36] Al-Snafi AE. The pharmacological importance of *Ailanthus altissima*- A review. *International Journal of Pharmacy Review and Research* 2015; 5(2):121-129
- [37] Sulaiman GM. Antimicrobial and cytotoxic activities of methanol extract of *Alhagi maurorum*. *Afr J Microbiol Res* 2013; 7(16): 1548-1557.
- [38] Al-Snafi AE. *Alhagi maurorum* as a potential medicinal herb: An Overview. *International Journal of Pharmacy Review and Research* 2015; 5(2):130-136.
- [39] Abdel Rahman SM, Abd-Ellatif SA, Deraz SF and Khalil AA. Antibacterial activity of some wild medicinal plants collected from western Mediterranean coast, Egypt: Natural alternatives for infectious disease treatment. *African Journal of Biotechnology* 2011; 10(52):10733-10743.
- [40] Zain ME, Awaad MS, Al-Outhman1 MR and El-Meligy RM. Antimicrobial activities of Saudi Arabian desert plants. *Phytopharmacology* 2012; 2(1): 106-113.
- [41] Neamah NF. A Pharmacological evaluation of aqueous extract of *Alhagi maurorum*. *Global Journal of Pharmacology* 2012; 6(1): 41-46.
- [42] Nath KVS, Rao KNV, Sandhya S *et al*. *In vitro* antibacterial activity of dried scale leaves of *Allium cepa* linn. *Der Pharmacia Lettre* 2010; 2(5): 187-192.

- [43] Benkeblia N. Antimicrobial activity of essential oil extracts of various onions (*Allium cepa*) and garlic (*Allium sativum*). *Lebensm.-Wiss u –Technol* 2004; 37: 263-268.
- [44] Humayun AT, Hussain MB, Yasir M and Sikandar S. *In vitro* antibacterial activity of onion (*Allium cepa*) against clinical isolates of *Vibrio cholera*. *J Ayub Med Coll Abbottabad* 2010; 22 (2): 160-163.
- [45] Ross IA. *Medicinal Plants of the world: Chemical constituents, traditional and modern medicinal uses*. Humana Press, Totowa, 2001: 1-9.
- [46] Kabelik J. Antimikrobielle Eigenschaften des Knoblauchs. *Pharmazie* 1970; 25: 266-270.
- [47] Whitmore BB, Naidu AS. Thiosulfinates. In: *Natural Food Antimicrobial Systems*. Naidu AS (Ed). CRC Press, Boca Raton, Florida, USA, 2000: 265- 380 .
- [48] Afunwa RA, Okonkwo TC, Egbuna RN and Ikegbune C. Comparative effects of *Allium sativum* (Garlic) and *Allium porrum* (Leek) on lacerated wound isolates. *Open Journal of Internal Medicine* 2022; 12: 184-193.
- [49] Benkeblia N and Lanzotti V. Allium thiosulfinates: chemistry, biological properties and their potential utilization in food preservation. *Food* 2007; 1(2): 193-201.
- [50] Adetumbi MA, and Lau BHS. *Allium sativum* (garlic)- a natural antibiotic. *Med Hypotheses* 1983; 12: 227-237.
- [51] Abbruzzese MR, Delaha EC and Garagusi VF. Absence of antimycobacterial synergism between garlic extract and antituberculosis drugs. *Diagnosis and Microbiology of Infectious* 1987; 8: 79–85.
- [52] Fitzpatrick FK. Plant substances active against *Mycobacterium tuberculosis*. *Antibiotics and Chemotherapy* 1954; 4: 528–529.
- [53] Sharma VD. Antibacterial property of *Allium sativum*. *In vivo* and *in vitro* studies. *Indian Journal of Experimental Biology* 1980; 15: 466-469.
- [54] Arunachalam K. Antimicrobial activity of garlic, onion and honey. *Geobios* 1980; 71: 46-47.
- [55] Bolton S, Null G and Troetel WM. The medical uses of garlic-fact and fiction. *J Am Pharm Assoc* 1989; 22: 40-43.
- [56] Rao RR, Rao SS, Natarajan S and Venkataraman PR. Inhibition of *Mycobacterium tuberculosis* by garlic extract. *Nature (London)*, 1946: 157.
- [57] Gonzalez-Fandos E, Garcia-Lopez M L, Sierra M L, and Otero A. Staphylococcal growth and enterotoxins (A-D) and thermonuclease synthesis in the presence of dehydrated garlic. *J Appl Bacteriol* 1944; 77: 549-552.
- [58] Cellini L, Di Campli E, Masulli M, Di Bartolomeo S and Allocati N. Inhibition of *Helicobacter pylori* by garlic extract (*Allium sativum*). *FEMS Immunol Med Microbiol* 1996; 13: 273-277.
- [59] Rabinkov A, Miron T, Konstantinovski L, Wilchek M, Mirelman D, and Weiner L. The mode of action of allicin: trapping of radicals and interaction with thiol containing proteins. *Biochim Biophys Acta* 1988; 1379: 233-244.
- [60] Focke M, Feld A, and Lichtenthaler K. Allicin, a naturally occurring antibiotic from garlic, specifically inhibits acetyl-CoA synthetase. *FEBS Lett* 1990; 261: 106-108.
- [61] Al-Snafi AE. Pharmacological effects of *Allium* species grown in Iraq. An overview. *International Journal of Pharmaceutical and health care Research* 2013;1(4):132-147.
- [62] Rattanachaikunsopon P, and Phumkhachorn P. Diallyl sulfide content and antimicrobial activity against food-borne pathogenic bacteria of chives (*Allium schoenoprasum*). *Biosci Biotechnol Biochem* 2008; 72(11): 2987-2991.
- [63] Pooter D, Omar HL, Coolsaet MN and Schamp BA, The essential oil of greater galanga (*Alpinia galanga*) from Malaysia. *Phytochemistry* 1985; 24: 93-96.
- [64] Turker A and Usta C. Biological activity of some medicinal plants sold in Turkish Health-food stores. *Biodiversity Ecosyst* 2002; 34(19): 105-113.
- [65] Tachakittirungrod S and Chowwanapoonpohn S. Comparison of antioxidant and antimicrobial activities of essential oils from *Hyptis suaveolens* and *Alpinia galanga* growing in Northern Thailand. *CMU J Nat Sci* 2007; 6: 31-42.
- [66] Hsu W, Weissman SA and Kim J. Antimicrobial activity of greater galangal [*Alpinia galanga* (Linn.) Swartz.] flowers. *Food Science and Biotechnology* 2010; 19(4): 873-880.

- [67] Oonmetta-aree J, Suzuki T, Gasaluck P, and Eumkeb G. Antimicrobial properties and action of galangal (*Alpinia galanga* Linn.) on *Staphylococcus aureus*. *Lebenson WissTechnol(LWT)* 2006; 39: 1214-1220.
- [68] Al-Snafi AE. The pharmacological activities of *Alpinia galangal* - A review. *International Journal for Pharmaceutical Research Scholars* 2014; 3(1-1): 607-614.
- [69] Valiei M, Shafaghat A and Salimi F. Chemical composition and antimicrobial activity of the flower and root hexane extracts of *Althaea officinalis* in Northwest Iran. *Journal of Medicinal Plants Research* 2011; 5(32): 6972-6976.
- [70] Al-Snafi AE. The Pharmaceutical importance of *Althaea officinalis* and *Althaea rosea*: A Review. *Int J Pharm Tech Res* 2013; 5(3):1387-1385.
- [71] May G and Willuhn G. Antiviral activity of aqueous extracts from medicinal plants in tissue cultures. *Arzneim-Forsch* 1985; 28(1): 1-7.
- [72] Mert T, Fafal T, Kivçak B and Oztürk, HT. Antimicrobial and cytotoxic activities of the extracts obtained from the flowers of *Alcea rosea* L. *Hacettepe University Journal of the Faculty of Pharmacy* 2010; 30(1): 17-24.
- [73] Jani S, Shukla V J, Harisha C R . Phytochemical and pharmacognostical investigation on *Ammania baccifera* Linn (Stem and Leaf). *International Journal of Pharmaceutical and Biological Archives* 2012; 3(4): 884-887.
- [74] Al-Snafi AE. The chemical constituents and pharmacological effects of *Ammannia baccifera* - A review. *International Journal of Pharmacy* 2015; 5(1): 28-32.
- [75] Upadhyay H C and Thakur J P. Anti- tubercular agents from *Ammannia baccifera* (Linn) . *Med Chem Res* 2013; 22: 16-21.
- [76] Ghareeb AM, Zedan TH , and Gharb LA. Antibacterial and antifungal activities of *Ammi visnaga* extracts against pathogenic microorganisms. *Iraqi Journal of Science* 2011; 52(1): 30-36.
- [77] Semyari1 H, Owlia P, Farhadi S and Saeed Tabrizi M. Evaluation of anti-microbial effect of *Ammi visnaga* against oral streptococci. *Journal of Microbiology and Antimicrobials* 2011; 3(5): 126-129.
- [78] Al-Snafi AE. Chemical constituents and pharmacological activities of *Ammi majus* and *Ammi visnaga*. A review. *International Journal of Pharmacy and Industrial Research* 2013; 3(3):257-265.
- [79] Darwish RM and Aburjai TA. Effect of ethnomedicinal plants used in folklore medicine in Jordan as antibiotic resistant inhibitors on *Escherichia coli*. *BMC Complement Altern Med* 2010: 10-9.
- [80] Al-Snafi AE. Traditional uses of Iraqi medicinal plants. *IOSR Journal of Pharmacy* 2018; 8 (8): 32-96.
- [81] Abutbul S, Golan-Goldhirsh A, Barazani O, Ofir R and Zilberg D. Screening of desert plants for use against bacterial pathogens in fish. *Israeli Journal of Aquaculture* 2005; 57(2); 71-80.
- [82] Al-Snafi AE. The pharmacology of *Anchusa italica* and *Anchusa strigosa*- A review. *International Journal of Pharmacy and Pharmaceutical Sciences* 2014; 6(4): 7-10.
- [83] Delaquis PJ, Stanich K, Girard B et al. Antimicrobial activity of individual and mixed fractions of dill, cilantro, coriander and eucalyptus essential oils. *Int J Food Microbiol*, 74, 2002, 101-109.
- [84] Singh G, Kapoor IPS, Pandey SK et al. Studies on essential oils: part 10: Antibacterial activity of volatile oils of some spices. *Phytother Res* 2001; 16: 680-682.
- [85] Al-Snafi AE. The pharmacological importance of *Anethum graveolens*- A review. *International Journal of Pharmacy and Pharmaceutical Sciences* 2014; 6(4): 11-13.
- [86] Saderi H, Owlia P, Hosseini A and Semiyari H. Antimicrobial effects of chamomile extract and essential oil on clinically isolated *Porphyromonas gingivalis* from periodontitis. *Acta Hort* 2005; 6: 680.
- [87] Al-Snafi AE. Medical importance of *Anthemis nobilis* (*Chamaemelum nobilis*)- A review. *Asian Journal of Pharmaceutical Science & Technology* 2016; 6(2): 89-95.
- [88] Rücker G, Mayer R and Lee KR. Peroxides as plant constituents. 6. Hydroperoxides from the blossoms of Roman chamomile, *Anthemis nobilis* L. *Arch Pharm* 1989;322(11): 821-826.
- [89] Jafari S, Amanlou M, Borhan-Mojabi K, and Farsam H. Comparative study of *Zataria multiflora* and *Anthemis nobilis* extracts with *Myrthus communis* preparation in the treatment of recurrent aphthous stomatitis. *Daru* 2011; 11(1); 301.

- [90] Riaz M, rasool N, Rasool S, Bukhari IH, Zubair M, Noreen M and Abbas M. Chemical analysis, cytotoxicity and antimicrobial studies by snapdragon: A medicinal plant. *Asian Journal of Chemistry* 2013; 25(10): 5479-5482.
- [91] Al-Snafi AE. The pharmacological importance of *Antirrhinum majus* - A review. *Asian J of Pharm Sci & Tech* 2015; 5(4): 313-320.
- [92] Baananou S, Bouftira I, Mahmoud A, Boukef K, Marongiu B and Boughattas NA. Antiulcerogenic and antibacterial activities of *Apium graveolens* essential oil and extract. *Natural Product Research: Formerly Natural Product Letter* 2013; 27(12):1075-1083.
- [93] Naema NF, Dawood B and Hassan S. A study of some Iraqi medicinal plants for their spasmolytic and antibacterial activities. *Journal of Basrah Researches* 2010; 36(6): 67-73.
- [94] Sipailiene A, Venskutonis PR, Sarkinas A and Cypiene V. Composition and antimicrobial activity of celery (*Apium graveolens*) leaf and root extracts obtained with liquid carbon dioxide. *Acta Hort* 2005; 677:71-77.
- [95] Al-Snafi AE. The Pharmacology of *Apium graveolens*- A review. *International Journal for Pharmaceutical Research Scholars* 2014; 3(1-1): 671-677.
- [96] Quist EE. Peanut (*Arachis hypogaea* L.) as a source of antihypertensive and antimicrobial peptides . MSc thesis , Graduate Faculty of the University of Georgia, Athens, 2005.
- [97] Al-Snafi AE. Chemical constituents and pharmacological activities of *Arachis hypogaea* - A review. *International Journal for Pharmaceutical Research Scholars* 2014; 3(1-1): 615-623.
- [98] Pereira JV, Bergamo DCB, Pereira JO, Franca SC and Va-Sousa YTC. Antimicrobial activity of *Arctium lappa* constituents against microorganisms commonly found in endodontic infections. *Braz Dent J* 2005; 16(3): 192-196.
- [99] Gentil M, Pereira JV, Silva-Sousa, YTC, Sousa-Neto M D, Vansan LP and França SC. *In vitro* evaluation of the antibacterial activity of *Arctium lappa* as a phytotherapeutic agent used in intracanal dressings. *Phyther Res* 2006; 20(3) 184-186.
- [100] Al-Snafi AE. The Pharmacological importance and chemical constituents of *Arctium Lappa*. A review. *International Journal for Pharmaceutical Research Scholars* 2014; 3(1-1): 663-670.
- [101] Djidel S and Khennouf S. Radical scavenging, reducing power, lipid peroxidation inhibition and chelating properties of extracts from *Artemisia campestris* L. aerial parts. *Annual Research & Review in Biology* 2014; 4(10):1691-1702.
- [102] Al-Snafi AE. The pharmacological importance of *Artemisia campestris*- A review. *Asian Journal of Pharmaceutical Research* 2015;5(2): 88-92.
- [103] Shirvani A, Mozaffari M and Zarei M. Antimicrobial effects of 14 medicinal plant species of dashti in Bushehr province. *Iranian south Medical Journal* 2014; 17(1): 49-57.
- [104] Al-Snafi AE. The constituents and biological effects of *Arundo donax* - A review. *International Journal of Phytopharmacy Research* 2015; 6(1): 34-40.
- [105] Al-Snafi AE. Chemical constituents and pharmacological effects of *Asclepias curassavica* – A review. *Asian Journal of Pharmaceutical Research* 2015; 5(2): 83-87.
- [106] Zhu X, Zhang W, Zhao J, Wang J and Qu W. Hypolipidaemic and hepatoprotective effects of ethanolic and aqueous extracts from *Asparagus officinalis* *Asparagus officinalis* L. by products in mice fed a high-fat diet. *Journal of the Science of Food and Agriculture* 2010; 90(7): 1129–1135.
- [107] Al-Snafi AE. The pharmacological importance of *Asparagus officinalis* - A review. *Journal of Pharmaceutical Biology* 2015; 5(2): 93-98.
- [108] Ahmed A, Al-Amiery H, Ali A, Al-Temimi RW, Abood H. A study of the biological activities of *Avena sativa* extracts. *Af J Pure Applied Chem* 2010; 4: 31-34.
- [109] Al-Snafi AE. The nutritional and therapeutic importance of *Avena sativa* - An Overview. *International Journal of Phytotherapy* 2015; 5(1): 48-56.
- [110] Mathur A, Verma SK, Purohit R, Singh SK, Mathur D, Prasad G and Dua VK. Pharmacological investigation of *Bacopa monnieri* on the basis of antioxidant, antimicrobial and anti-inflammatory properties. *J Chem Pharm Res* 2010; 2(6): 191-198.

- [111] Azad AK, Awang M, Rahman MM. Phytochemical and microbiological evaluation of a local medicinal plant *Bacopa monnieri* (L.) Penn. International Journal of Current Pharmaceutical Review and Research 2012; 3(3): 66-78.
- [112] Al-Snafi AE. The pharmacology of *Bacopa monniera*. A review. International Journal of Pharma Sciences and Research 2013; 4(12): 154-159.
- [113] Yilmaz BS, Altanlar N, Citoglu GS. Antilisterial activity of *Ballota* species growing in Turkey. Ankara Ecz Fak Derg 2005; 34(3): 155-164.
- [114] Al-Snafi AE. The Pharmacological Importance of *Ballota nigra* –A review. Ind J of Pharm Sci & Res 2015; 5(4): 249-256.
- [115] Didry N, Seidel V, Dubreuil L, Tillequin F and Bailleul F. Isolation and antibacterial activity of phenylpropanoid derivatives from *Ballota nigra*. J Ethnopharmacol 1999; 67(2): 197-202.
- [116] Kanak S and Verma Anita K. Evaluation of antimicrobial and anticancer activities of methanol extract of *in vivo* and *in vitro* grown *Bauhinia variegata* L. International Research Journal of Biological Sciences 2012; 1(6): 26-30.
- [117] Al-Snafi AE. The Pharmacological importance of *Bauhinia variegata*. A Review. Journal of Pharma Sciences and Research 2013; 4(12): 160-164.
- [118] Sharma RN, Saxena VK. *In vitro* antimicrobial efficacy of leaves extracts of *Bauhinia variegata* Linn. Asian J Chemistry 1996; 8(4): 811-812.
- [119] Ceylan O, Ugur A and Sarac N. *In vitro* antimicrobial, antioxidant, antibiofilm and quorum sensing inhibitory activities of *Bellis perennis* L. J BioSci Biotech 2014: 35-42.
- [120] Al-Snafi AE. The Pharmacological importance of *Bellis perennis* - A review. International Journal of Phytotherapy 2015; 5(2): 63-69.
- [121] Avato P, Vitali C, Mongelli P and Tava A. Antimicrobial activity of polyacetylenes from *Bellis perennis* and their synthetic derivatives. Planta Med 1997; 63(6): 503-507.
- [122] Tahir L, Chand B and Rahman S. Antibacterial study on *Benincasa hispida* and *Nigella sativa* oil. J Pharm 2013; 4(4):121-122.
- [123] Natarajan D, Lavarasan RJ, Chandra babu S, Sahib MACS, Refai T and Thameemul-Ansari LH. Antimicrobial studies on methanolic extract of *Benincasa hispida*. Ancient Science of life 2003: 98-100.
- [124] Al-Snafi AE. The Pharmacological Importance of *Benincasa hispida*. A review. Int Journal of Pharma Sciences and Research 2013; 4(12): 165-170.
- [125] Shin S, Park C E, Baek N I, Chung I C and Park C H. Betulinic and oleanolic acids isolated from *Forsythia suspensa* VAHL inhibit urease activity of *Helicobacter pylori*. Biotechnology and Bioprocess Engineering 2009; 14(2): 140-145.
- [126] Al-Snafi AE. The medical importance of *Betula alba* - An overview. Journal of Pharmaceutical Biology 2015; 5(2): 99-103.
- [127] Tomczykowa M, Tomczyk M, Jakoniuk P and Tryniszewska E. Antimicrobial and antifungal activities of the extracts and essential oils of *Bidens tripartite*. Folia Histochemica Et Cytobiologica 2008; 46(3): 389-393.
- [128] Beltagy AM. Investigation of new antimicrobial and antioxidant activities of *Brassica rapa* L. Int J Pharm Pharm Sci 2014; 6(6): 84-88.
- [129] Al-Snafi AE. The pharmacological importance of *Brassica nigra* and *Brassica rapa* grown in Iraq. J of Pharm Biology 2015; 5(4): 240-253.
- [130] Quazi MA, Nazim S, Afsar S, Siraj S and Patel MS. Evaluation of antimicrobial activity of roots of *Kalanchoe pinnata*. Int J Pharmacol Bio Sci 2011; 5(1): 93-96.
- [131] Al-Snafi AE. The Chemical constituents and pharmacological effects of *Bryophyllum calycinum*-A review. Journal of Pharma Sciences and Research 2013; 4(12): 171-176.
- [132] Okwu DE and Nnamdi FU. Two novel flavonoids from *Bryophyllum pinnatum* and their antimicrobial Activity. Pharmaceutical Chemistry Journal 2011; 3(2): 1-10.
- [133] Akinpelu DA. Antimicrobial activity of *Bryophyllum pinnatum* leaves. Fitoterapia 2000; 71: 193–194.

- [134] Al-Snafi AE. Pharmacology and medicinal properties of *Caesalpinia crista* - An overview. *International Journal of Pharmacy* 2015; 5(2): 71-83.
- [135] Hamad MN, Mohammed HJ, Merdaw MA. Antibacterial activity of *Calendula officinalis* flowers in vitro. *Ibn AlHaitham J. Pure & Appl Sci*, 24(3), 2011, 1-7.
- [136] Efstratiou E, Hussain AI, Nigam PS, Moore JE, Ayub MA, Rao JR. Antimicrobial activity of *Calendula officinalis* petal extracts against fungi, as well as Gram-negative and Gram-positive clinical pathogens. *Complement Ther Clin Pract*, 18(3), 2012, 173-176.
- [137] Al-Snafi AE. The chemical constituents and pharmacological effects of *Calendula officinalis* - A review. *Indian Journal of Pharmaceutical Science & Research* 2015; 5(3): 172-185.
- [138] Faria RL, Cardoso LM, Akisue G, Pereira CA, Junqueira JC, Jorge AO, Santos Júnior PV. Antimicrobial activity of *Calendula officinalis*, *Camellia sinensis* and chlorhexidine against the adherence of microorganisms to sutures after extraction of unerupted third molars. *J Appl Oral Sci*, 19(5), 2011, 476-482.
- [139] Szakiel A, Ruskowski D, Grudniak A, Kurek A, Wolska KI, Doligalska M, Janiszowska W. Antibacterial and antiparasitic activity of oleanolic acid and its glycosides isolated from marigold (*Calendula officinalis*). *Planta Med*, 74(14), 2008, 1709-1715.
- [140] Moronkola DO, Ogukwe C, Awokoya KN. Chemical compositions of leaf and stem essential oils of *Calotropis procera* Ait R.Br [Asclepiadaceae]. *Der Chemica Sinica* 2011; 2(2): 255-260.
- [141] Bouratoua A, Khalfallah A, Kabouche A, Semza Z, Kabouche Z. Total phenolic quantification, antioxidant, antibacterial activities and flavonoids of Algerian *Calotropis procera* (Asclepiadaceae). *Der Pharmacia Lettre* 2013; 5 (4): 204-207.
- [142] Mako GA, Memon AH, Mughal UR, Pirzado AJ, Bhatti SA. Antibacterial effects of leaves and root extract of *Calotropis procera* Linn. *Pak J Agri Agril Engg Vet Sci* 2012;28 (2): 141-149.
- [143] Al-Snafi AE. The constituents and pharmacological properties of *Calotropis procera* - An Overview. *International Journal of Pharmacy Review & Research* 2015; 5(3): 259-275.
- [144] Al-Snafi AE. Bioactive components and pharmacological effects of *Canna indica*- An overview. *International Journal of Pharmacology and toxicology* 2015; 5(2):71-75.
- [145] Abdullah E, Raus R, A and Jamal P. Extraction and evaluation of antibacterial activity from selected flowering plants. *American Medical Journal* 2012; 3(1): 27-32.
- [146] Al-Snafi AE. The pharmacological importance of Capsicum species (*Capsicum annum* and *Capsicum frutescens*) grown in Iraq. *Journal of Pharmaceutical Biology* 2015; 5(3): 124-142.
- [147] Shayan S and Saeidi S. Antibacterial and antibiofilm activities of extract *Capsicum annum* L on the growth and biofilm. *International Research Journal of Applied and Basic Sciences* 2013; 5 (4):513-518.
- [148] Mahasneh AM, Abbas JA and Aqlah AA .Antimicrobial activity of extracts of herbal plants used in the traditional medicine of Bahrain. *Phytotherapy Res* 1996; 10: 251-253.
- [149] Jagannath R. Phytochemical and pharmacological screening on roots of *Capparis spinosa* F (capparidaceae). MSc thesis, HKES College of Pharmacy, Gulbarga, 2010.
- [150] Hasan RN, Ali M R, Shakier S M, Khudhair M M, Hussin M S, Kadum Y A, Mohammed A I and Abbas A A. Antibacterial activity of aqueous and alcoholic extracts of *Capsella Bursa* against selected pathogenic bacteria. *American Journal of BioScience* 2013; 1(1): 6-10.
- [151] Al-Snafi AE. The chemical constituents and pharmacological effects of *Capsella bursa-pastoris* - A review. *International Journal of Pharmacology and toxicology* 2015; 5(2):76-81.
- [152] Park C J, Park C B, Hong S S, Lee H S, Lee S Y and Kim S C. Characterization and cDNA cloning of two glycine- and histidine-rich antimicrobial peptides from the roots of shepherd's purse, *Capsella bursa-pastoris*. *Plant Mol Biol* 2007; 44(2):187-197.
- [153] Alizadeh H, Jafari1 B and Babae T. The study of antibacterial effect of *Capsella ursa-pastoris* on some of gram positive and gram negative bacteria. *J Basic ApplSci Res* 2012; 2(7): 6940-6945.
- [154] Grosso C, Vinholes J, Silva L R, de Pinho B G, Gonçalves R F, Valentão P, Jäger A K and Andrade P B. Chemical composition and biological screening of *Capsella bursa-pastoris*. *Brazilian Journal of Pharmacognosy* 2011; 21(4): 635-644.

- [155] Hemalatha N and Dhasarathan P. Comparative study on the antimicrobial activity of *Capsicum annuum* and *Capsicum frutescens*. International Journal of Ethnomedicine and Pharmacological Research 2013; 1(1): 142-147.
- [156] Al-Snafi AE. The pharmacological importance of *Capsicum* species (*Capsicum annuum* and *Capsicum frutescens*) grown in Iraq. Journal of Pharmaceutical Biology 2015; 5(3): 124-142.
- [157] Careaga M, Fernández E, Dorantes L, Mota L, Jaramillo ME and Hernandez-Sanchez H. Antibacterial activity of *Capsicum* extract against *Salmonella typhimurium* and *Pseudomonas aeruginosa* inoculated in raw beef meat. Int J Food Microbiol 2003; 83(3):331-335.
- [158] Shayan S and Saeidi S. Antibacterial and antibiofilm activities of extract *Capsicum annuum* L on the growth and biofilm. International Research Journal of Applied and Basic Sciences 2013; 5 (4): 513-518.
- [159] Soumya SL and Nair BR. Antifungal efficacy of *Capsicum frutescens* L. extracts against some prevalent fungal strains associated with groundnut storage. Journal of Agricultural Technology 2012; 8(2): 739-750.
- [160] Avirutnant W and Pongpan A. The antimicrobial activity of some Thai flowers and plants. Mahidol University Journal of Pharmaceutical Sciences 1983; 10: 81-86.
- [161] Al-Snafi AE. The chemical constituents and pharmacological importance of *Carthamus tinctorius* - An overview. Journal of Pharmaceutical Biology 2015; 5(3): 143-166.
- [162] Grigore C, Colceru-Mihuli S, Paraschiv I, Nita S, Christof R, Iuksel R and Ichim M. Chemical analysis and antimicrobial activity of indigenous medicinal species volatile oils. Romanian Biotechnological Letters 2012; 17(5): 7620-7627.
- [163] Al-Snafi AE. The chemical constituents and pharmacological effects of *Carum carvi* - A review. Indian Journal of Pharmaceutical Science and Research 2015; 5(2): 72-82.
- [164] Seidler-Łożykowska K, Kędzia B, Karpińska E and Ja Bocianowski J. Microbiological activity of caraway (*Carum carvi* L.) essential oil obtained from different origin. Acta Scientiarum. Agronomy 2013; 35(4): 495-500.
- [165] Iacobellis NS, Lo Cantore P, Capasso F and Senatore F. Antibacterial activity of *Cuminum cyminum* L. and *Carum carvi* L. essential oils. J Agric Food Chem 2005; 53: 57-61.
- [166] Gniewosz M, Kraśniewska K, Woreta M and Kosakowska O. Antimicrobial activity of a pullulan-caraway essential oil coating on reduction of food microorganisms and quality in fresh baby carrot. J Food Sci 2013; 78(8): M1242-1248.
- [167] Mahady GB, Pendland SL, Stoia A, Hamill FA, Fabricant D, Dietz BM and Chadwick LR. *In vitro* susceptibility of *Helicobacter pylori* to botanical extracts used traditionally for the treatment of gastrointestinal disorders. Phytother Res 2005; 19(11): 988-991.
- [168] Sadiq IS, Shuaibu M, Bello AB, Tureta SG, Isah A, Izuagie T, Nasiru S and Kamaru MB. Phytochemistry and antimicrobial activities of *Cassia occidentalis* used for herbal remedies. Journal of Chemical Engineering 2012; 1(1): 38-41.
- [169] Al-Snafi AE. The therapeutic importance of *Cassia occidentalis* - An overview. Indian Journal of Pharmaceutical Science & Research 2015; 5 (3): 158-171.
- [170] Oladunmoye MK, Adetuyi FC and Akinyosoye FA. Release of sodium and potassium ions by aqueous and ethanolic extract of *Cassia occidentalis* on some selected bacteria. Trends in Applied Sciences Research 2007; 2(1): 85-87.
- [171] Parekh J, Jadeja D and Chanda S. Efficacy of aqueous and methanol extracts of some medicinal plants for potential antibacterial activity. Turk J Biol 2005; 29: 203-210.
- [172] Al-Snafi AE. The pharmacological importance of *Casuarina equisetifolia* - An overview. International Journal of Pharmacological Screening Methods 2015; 5(1): 4-9.
- [173] Gumgumjee NM and Hajar AS. Antimicrobial efficacy of *Casuarina equisetifolia* extracts against some pathogenic microorganisms. Journal of Medicinal Plants Research 2012; 6(47): 5819-5825.
- [174] Amin M, Anwar F, Naz F, Mehmood T and Saari N. Anti-*Helicobacter pylori* and urease inhibition activities of some traditional medicinal plants. Molecules 2013; 18(2): 2135-2149.
- [175] Yun S M, Choi B H, Ku H O, Lee M H, Nam H M, Lee K J, Park S W, Jang H J and Son S W. Antimicrobial activities of the flower extract of *Celosia cristata* L. Planta Med 2008; 74: PA31.

- [176] Al-Snafi AE. The chemical constituents and pharmacological importance of *Celosia cristata* – A review. J of Pharm Biology 2015; 5(4): 254-261.
- [177] Stanojković A, Ceković G, Čomić L, Pivić R and Stanojković A. Antibacterial properties of some plants from the family Asteraceae growing wild in Serbia. Lek Sirov 2008; 26/27: 11-20.
- [178] Stavri M, Gibbons S. The antimycobacterial constituents of Dill (*Anethum graveolens*). Phytother Res 2005; 19: 938-941.
- [179] Al-Snafi AE. The pharmacological importance of *Centaurea cyanus*- A review. Int J of Pharm Rev & Res 2015; 5(4): 379-384.
- [180] Adedapo A, Jimoh F and Afolayan A. Comparison of the nutritive value and biological activities of the acetone, methanol and water extracts of the leaves of *Bidens pilosa* and *Chenopodium album*. Acta Pol Pharm 2011; 68(1): 83-92.
- [181] Elif Korcan S, Aksoy O, Erdoğan SF, Çiğerci İH and Konuk M. Evaluation of antibacterial, antioxidant and DNA protective capacity of *Chenopodium album*'s ethanolic leaf extract. Chemosphere 2013; 90(2): 374-379.
- [182] Singh PK, Dwevedi AK and Dhakre G. Evaluation of antibacterial activities of *Chenopodium album* L. International Journal of Applied Biology and Pharmaceutical Technology 2011; 2(3): 398-401.
- [183] Nayak DP, Swain PK, Panda OP, Pattanaik P and Srinivas B. Antimicrobial and anthelmintic evaluation of *Chenopodium album*. IJPWR 2010; 1(4): 1-15.
- [184] Al-Snafi AE. The chemical constituents and pharmacological effects of *Chenopodium album* - An overview. International J of Pharmacological Screening Methods 2015; 5(1): 10-17.
- [185] Amjad L and Alizad Z. Antibacterial Activity of the *Chenopodium album* leaves and flowers extract. World Academy of Science, Engineering and Technology 2012; 61: 903-906.
- [186] Jamil M, ul Haq I, Mirza B and Qayyum M. Isolation of antibacterial compounds from *Quercus dilatata* L. through bioassay guided fractionation. Annals of Clinical Microbiology and Antimicrobials 2012; 11: 1-11.
- [187] Al-Snafi AE. The chemical constituents and pharmacological importance of *Chrozophora tinctoria*. Int J of Pharm Rev & Res 2015; 5(4): 391-396.
- [188] Saleh TA, Al-Jboori WM and Al-Muhammadi AF Effect of Turnsoles *Chrozophora tinctoria* L. Extracts on Some Pathological Bacteria Types. Al-Anbar Journal of Agricultural Sci 2009; 7(1): 369-378.
- [189] Sujatha S, Prakash G and Vinayak K. Exploration of bioactive screening against the microbial organisms from the two different *Chrysanthemum* medicinal plant flower with two assorted extracts. International Journal of Pharmacy & Bio-Sciences 2015; 1(1):1-7.
- [190] Kan A, Özçeli B, Kartal M, Özdemir ZA, and Özgen S. *In vitro* antimicrobial activities of *Cicer arietinum* L (Chickpea). Tropical Journal of Pharmaceutical Research 2010; 9 (5): 475-481.
- [191] Al-Snafi AE. The medical Importance of *Cicer arietinum* - A review. IOSR Journal of Pharmacy 2016; 6(3): 29-40.
- [192] Dalal K, Ahlawat S, Munjal H and Patra A. Antibacterial activity of roots of *Cicer arietinum* Linn. J Chem Pharm Res 2010; 2(3): 43-46.
- [193] Thanekar SKS, Ramachandra YL and Udgire M. Extraction, isolation and antibacterial evaluation of crude and purified ferritin extract from *Cicer arietinum* L World Journal of Pharmacy and Pharmaceutical Sciences 2013;2(6): 6325-6330.
- [194] Koner A, Ghosh S and Roy P. Isolation of antimicrobial compounds from chicory (*Cichorium intybus* L.) root. International Journal of Research in Pure and Applied Microbiology 2011; 1(2): 13-18.
- [195] Al-Snafi AE. Medical importance of *Cichorium intybus* – A review IOSR Journal of Pharmacy 2016; 6(3): 41-56.
- [196] Papetti A, Mascherpa D, Carazzone C, Stauder M, Spratt DA, Wilson M, Pratten J, Ciric L, Lingström P, Zaura E, Weiss E, Ofek I, Signoretto C, Pruzzo C and Gazzani G. Identification of organic acids in *Cichorium intybus* inhibiting virulence-related properties of oral pathogenic bacteria. Food Chem 2013;138(2-3):1706-1712.
- [197] Nandagopa S and Ranjitha Kumari D. Phytochemical and antibacterial studies of chicory (*Cichorium intybus* L.)- a multipurpose medicinal plant. Advances in Biological Research 2007; 1 (1-2): 17-21.

- [198] Verma R, Rawat A, Ganie SA, Agnihotri RK, Sharma R, Mahajan S and Gupta A. In vitro Antibacterial Activity of *Cichorium intybus* against some pathogenic bacteria. *British Journal of Pharmaceutical Research* 2013;3(4): 767-775.
- [199] Liu H, Wang Q, Liu Y, Chen G and Cui J. Antimicrobial and antioxidant activities of *Cichorium intybus* root extract using orthogonal matrix design. *J Food Sci* 2013; 78(2): M258-263.
- [200] Stefanović OD, Stanojević DD and Comić LR. Synergistic antibacterial activity of *Salvia officinalis* and *Cichorium intybus* extracts and antibiotics. *Acta Pol Pharm* 2012; 69(3):457-463.
- [201] Mehmood N, Zubair M, Rizwan K, Rasool N Shahid M and Ahmad VU. Antioxidant, antimicrobial and phytochemical analysis of *Cichorium intybus* seeds extract and various organic fractions. *Iranian Journal of Pharmaceutical Research* 2012; 11 (4): 1145-1151.
- [202] Al-Snafi AE. Bioactive metabolites and pharmacology of *Cistanche tubulosa*- A review. *IOSR Journal of Pharmacy* 2020; 10(1): 37-46.
- [203] Mehta A, Srivastva G, Kachhwaha S, Sharma M and Kothari SL. Antimycobacterial activity of *Citrullus colocynthis* (L.) Schrad. against drug sensitive and drug resistant *Mycobacterium tuberculosis* and MOTT clinical isolates. *J Ethnopharmacol* 2013; 149(1): 195-200.
- [204] Al-snafi AE. Chemical constituents and pharmacological effects of *Citrullus colocynthis* - A review. *IOSR Journal Of Pharmacy* 2016; 6(3): 57-67.
- [205] Rodge SV and Biradar SD. Preliminary phytochemical screening and antimicrobial activity of *Citrullus colocynthis* (Linn.) Schrad. *Indian Journal of Plant Sciences* 2013; 2 (1) 19-23.
- [206] Najafi S, Sanadgol N, Nejad BS, Beiragi MA and Sanadgol E. Phytochemical screening and antibacterial activity of *Citrullus colocynthis* (Linn.) Schrad against *Staphylococcus aureus*. *Journal of Medicinal Plants Research* 2010; 4(22):2321-2325.
- [207] Khatibi R and Teymorri J. Anticandidal screening and antibacterial of *Citrullus colocynthis* in South East of Iran. *Journal of Horticulture and Forestry* 2011; 3(13): 392-398.
- [208] Al-hejjaj MY, Alhurba YA and Mohamad SA. Study of alkaloid extract from *Citrullus colocynthis* fruit and its antimicrobial activity screening. *Journal of Basrah Researches (Sciences)* 2010; 36(4): 42- 47.
- [209] Reddy LJ, Jalli1RD, Jose B and Gopu S. Evaluation of antibacterial & antioxidant activities of the leaf essential oil & leaf extracts of *Citrus aurantifolia*. *Asian Journal of Biochemical and Pharmaceutical Research* 2012; 2(2): 346-354.
- [210] Sekar M. Comparative evaluation of antimicrobial properties of citrus varieties available in Malaysia market. *International Journal of Current Pharmaceutical Research* 2013; 5(4): 32-35.
- [211] Srividhya M, Ramanathan K and Krishnanand N. Efficacy of citrus fruit peel extracts against pathogens causing gastrointestinal disorders. *Int J Pharm Pharm Sci* 2013; 5(4): 160-163.
- [212] Aibinu I, Adenipekun T, Adelowotan T, Ogunsanya T and Odugbemi T. Evaluation of the antimicrobial properties of different parts of *Citrus aurantifolia* (Lime fruit) as used locally. *African Journal of Traditional, Complementary and Alternative medicines (AJTCAM)* 2007; 4(2): 185-190.
- [213] Al-Snafi AE. Nutritional value and pharmacological importance of citrus species grown in Iraq. *IOSR Journal of Pharmacy* 2016; 6(8): 76-108.
- [214] Pathan RK, Gali PR, Pathan P, Gowtham T and Pasupuleti S. In vitro antimicrobial activity of *Citrus aurantifolia* and its phytochemical screening. *Asian Pacific Journal of Tropical Disease* 2012: S328-S331.
- [215] Yuwanita P. Extraction of citric acid in lime (*Citrus aurantifolia*) and its potential as an antimicrobial agent for *Escherichia coli*, *Salmonella* sp, *Lactobacillus acidophilus* and *Bacillus coagulans*. 2011, <http://hdl.handle.net/123456789/24845>
- [216] Sandoval-Montemayor NE, García A, Elizondo-Treviño E, Garza-González NE, Alvarez L and Camacho-Corona M. Chemical composition of hexane extract of *Citrus aurantifolia* and Anti-*Mycobacterium tuberculosis* activity of some of its constituents. *Molecules* 2012; 17: 11173-11184.
- [217] Tomatake H, Koga T, Yamato M, Kassu A and Ota F. Antibacterial activity of citrus fruit juices against *Vibrio* species. *J Nutr Sci Vitaminol* 2006; 52(2):157-160.

- [218] de Castillo MC, de Allori CG, de Gutierrez RC, de Saab OA, de Fernandez NP, de Ruiz CS, Holgado AP and de Nader OM. Bactericidal activity of lemon juice and lemon derivatives against *Vibrio cholerae*. *Biol Pharm Bull* 2000; 23(10):1235-1238.
- [219] Unnisa N, Tabassum H, Ali MN and Ponia K. Evaluation of antibacterial activity of five selected fruits on bacterial wound isolates. *Int J Pharm Bio Sci* 2012; 3(4): 531 - 546.
- [220] Sharma R, Sharma G and Sharma M. Anti-Malassezia furfur activity of essential oils against causal agent of *Pityriasis versicolor* disease. *African Journal of Pharmacy and Pharmacology* 2012; 6(13): 979-983.
- [221] Dhanavade MJ, Jalkute CB, Ghosh JS and Sonawane KD. Study antimicrobial activity of lemon (*Citrus lemon* L.) peel extract. *British Journal of Pharmacology and Toxicology* 2011; 2(3): 119-122.
- [222] Hindi NKK and Chabuck ZAG. Antimicrobial activity of different aqueous lemon extracts. *Journal of Applied Pharmaceutical Science* 2013; 3 (6): 74-78.
- [223] Oliveira SA, Zambrana JR, Iorio FB, Pereira CA and Jorge AO. The antimicrobial effects of *Citrus limonum* and *Citrus aurantium* essential oils on multi-species biofilms. *Braz Oral Res* 2014;28:22-27.
- [224] Shinkafi SA and Ndanusa H. Antibacterial activity of *Citrus limon* on *Acne vulgaris* (Pimples). *IJSIT* 2013; 2(5): 397-409.
- [225] Theanphong O, Songsak T and Mingvanish W. Chemical composition and antimicrobial activity of the essential oil from *Citrus medica* L. var. *sarcodactylis* (Sieber) Swingle leaf. *Mahidol University Journal of Pharmaceutical Sciences* 2008; 35(1-4): 57-61.
- [226] Kabra AO, Bairagi GB, Mahamuni AS and Wanare RS. *In vitro* antimicrobial activity and phytochemical analysis of the peels of *Citrus medica* L. *International Journal of Research in Pharmaceutical and Biomedical Sciences* 2012; 3(1): 34-37.
- [227] Sah AN, Juyal V and Melkani AB. Antimicrobial activity of six different parts of the plant *Citrus medica* Linn. *Pharmacognosy Journal* 2011; 21(3): 80-83.
- [228] Menghani E and Sharma SK. Screening for folklore antimicrobial activity. *Int J Pharm* 2012; 2(3): 557-560.
- [229] Unnisa N, Tabassum H, Ali MN and Ponia K. Evaluation of antibacterial activity of five selected fruits on bacterial wound isolates. *Int J Pharm Bio Sci* 2012; 3(4): 531 - 546.
- [230] Hindi NKK and Chabuck ZAG. Antimicrobial activity of different aqueous lemon extracts. *Journal of Applied Pharmaceutical Science* 2013; 3 (6): 74-78.
- [231] Javed S, Ahmad R, Shahzad K, Nawaz S, Saeed S and Saleem Y. Chemical constituents, antimicrobial and antioxidant activity of essential oil of *Citrus limetta* var. Mitha (sweet lime) peel in Pakistan. *Afr J Microbiol Res* 2013; 7(24) 3071-3077.
- [232] Kumar RV, Nandini S, and Anitha S. Antityphoid activity of aqueous extract of fruit peel *Citrus sinensis*. *International Journal of Pharma Research and Development* 2010; 2(1): 217-221.
- [233] Ekwenye UN and Edeha OV. The antibacterial activity of crude extract of *Citrus sinensis* (sweet orange). *International Journal of Pharma and Bio Sciences* 2010; 1(4): 742-750.
- [234] Lawa D, Bala JA, Aliyu SY and Huguma MA. Phytochemical screening and *in vitro* anti-bacterial studies of the ethanolic extract of *Citrus senensis* (Linn.) peel against some clinical bacterial isolates. *International Journal of Innovation and Applied Studies* 2013; 2(2):138-145.
- [235] Khushwaha A, Singh RP, Gupta V and Singh M. Antibacterial properties of peels of citrus fruits. *International Journal of Universal Pharmacy and Life Sciences* 2012; 2(2): 24-38.
- [236] Dhiman A, Nanda A, Ahmad S and Narasimhan B. *In vitro* antimicrobial status of methanolic extract of *Citrus sinensis* Linn. fruit peel. *Chronicles of Young Scientists* 2012; 3(3): 204-208.
- [237] Manish K, Mahesh AR and Somashekhar M. Evaluation of antitubercular activity of methanolic extract of *Citrus sinensis*. *International Journal of Pharma Research & Review* 2013; 2(8):18-22.
- [238] Rajarajan AT, Vijayasree VG, Kenichi W, Kumar SV, Narasimman G and kumar SS. Anthelmintic and antimicrobial properties of peels of *Citrus sinensis*. *Pharmacologyonline* 2009; 1: 363-368.
- [239] Hindi NK, Chabuck ZAG and Hindi SKK. Antibacterial evaluation of aqueous extracts of four *Citrus* species in Hilla. *International Journal of Pharmacological Screening Methods* 2014; 4(1):43-48.

- [240] Amandeep S, Bilal AR and Bevguni A. In vitro antibiotic activity of isolated volatile oil of *Citrus sinensis*. IJPRD 2009; 7:1-4.
- [241] Hussain KA, Tarakji B, Kandy BP, John J, Mathews J, Ramphul V and Divakar DD. Antimicrobial effects of *Citrus sinensis* peel extracts against periodontopathic bacteria: an in vitro study. Rocznik Hig 2015; 66(2):173-178.
- [242] Prasad MP, Sushant S and Chikkaswamy BK. Phytochemical analysis, antioxidant potential, antibacterial activity and molecular characterization of *Clerodendrum* species. International Journal of Molecular Biology 2012;3(3): 71-76.
- [243] Anandhi K and Ushadevi T. Analysis of phytochemical constituents and antibacterial activities of *Clerodendrum inerme* L. against some selected pathogens. IJBAF 2013; 1(7): 387-393.
- [244] Sabrin F, Hasan MN, Rahman MM, Islam KD and Billah MM. Investigation on antimicrobial activities of the two selected shrubs from the Sundarbans (*Clerodendrum inerme* and *Caesalpinia crista*). J Innov Dev Strategy 2011; 5(2): 62-69.
- [245] Khan AV and Khan AA. Antibacterial potential of *Clerodendrum inerme* crude extracts against some human pathogenic bacteria. Orient Pharm Exp Med 2006; 4: 306-311.
- [246] Al-Snafi AE. Chemical constituents and pharmacological effects of *Clerodendrum inerme*- A review. SMU Medical Journal 2016; 3(1): 129-153.
- [247] Ponnusamy S, Gnanaraj W, Marimuthu J, Selvakumar V and Nelson J. The effect of leaves extracts of *Clitoria ternatea* Linn against the fish pathogens. Asian Pacific Journal of Tropical Medicine 2010;3(9): 723-726.
- [248] Mhaskar AV, Prakash K, Vishwakarma KS and Maheshwari VL. Callus induction and antimicrobial activity of seed and callus extracts of *Clitoria ternatea* L. Current Trends in Biotechnology and Pharmacy 2010; 4(1):561-567.
- [249] Kamilla L, Mnsor SM, Ramanathan S and Sasidharan S. Antimicrobial activity of *Clitoria ternatea* (L.) extracts. Pharmacologyonline 2009; 1: 731-738.
- [250] Anand SP, Doss A and Nandagopalan V. Antibacterial studies on leaves of *Clitoria ternatea* Linn.-A high potential medicinal plant. Int J Appl Bio Pharm Tech 2011; 2(3): 453-456.
- [251] Al-Snafi AE. Pharmacological importance of *Clitoria ternatea* – A review. IOSR Journal of Pharmacy 2016; 6(3): 68-83.
- [252] Mammadov R, Düsen O, Uysal D and Köse E. Antioxidant and antimicrobial activities of extracts from tubers and leaves of *Colchicum balansae* Planchon. Journal of Medicinal Plants Research 2009; 3(10): 767-770.
- [253] Al-Snafi AE. Medicinal importance of *Colchicum candidum*- A review. The Pharmaceutical and Chemical Journal 2016; 3(2):111-117.
- [254] Abu-Mejdad NMJ, Shaker HA and Al-Mazini MAA. The effect of aqueous and acetonetic plant extracts of *Tagete patula* L, *Ammi visnaga* L and *Convolvulus arvensis* L in growth of some bacteria *in vitro*. Journal of Basrah Res (Sciences) 2010; 36(3): 23-32.
- [255] Al-Snafi AE. The chemical constituents and pharmacological effects of *Convolvulus arvensis* and *Convolvulus scammonia*- A review. IOSR Journal of Pharmacy 2016; 6(6): 64-75.
- [256] Baskaran C, Ratha Bai V, Sivamani P and Thiagarajan V. Phytochemical investigation and antimicrobial activity of *Corchorus aestuans* (tiliaceae). International Journal of Current Research 2011; 3(12):80-83.
- [257] Al-Snafi AE. The constituents and pharmacology of *Corchorus aestuans*: A review. The Pharmaceutical and Chemical Journal 2016; 3(4):208-214.
- [258] Patel RP. Evaluation of antibacterial activity of extracts of leaves and arial parts of *Corchorus aestuans* Linn. IRJP 2011; 2 (5): 228-230.
- [259] Ramadevi D and Swarnalatha D. Antimicrobial activity of leaf, capsule and roots of *Corchorus aestuans*. Journal of Global Trends in Pharmaceutical Sciences 2014; 5(4): 2030- 2033.
- [260] Rume JM. Phytochemical, antimicrobial and biological investigations of methanolic extract of leaves of *Corchorus capsularis*. Thesis for bachelor degree of pharmacy, East West University 2010.
- [261] Al-Snafi AE. The contents and pharmacological importance of *Corchorus capsularis*- A review. IOSR Journal of Pharmacy 2016; 6(6): 58-63.

- [262] Pandey B, Deshpand B, Singh S and Chandrakar V. Estimation of elemental contents of *Cordia myxa* and its antimicrobial activity against various pathogenic microorganisms. *Indian J Sci Res* 2014;4 (1): 39-44.
- [263] Al-Snafi AE. The Pharmacological and therapeutic importance of *Cordia myxa*- A review. *IOSR Journal of Pharmacy* 2016; 6(6): 47-57.
- [264] Oudah IM and Ali YH. Evaluation of aqueous and ethanolic extraction for Coriander seeds, leaves and stems and studying their antibacterial activity. *Iraqi Sci J Nursing* 2010; 23(2):1-7.
- [265] Al-Snafi AE. A review on chemical constituents and pharmacological activities of *Coriandrum sativum*. *IOSR Journal of Pharmacy* 2016; 6(7): 17-42.
- [266] Ratha bai V and Kanimozhi D. Evaluation of antimicrobial activity of *Coriandrum sativum*. *International Journal of Scientific Research and Reviews* 2012;1(3): 1-10.
- [267] Reddy LH, Jalli RD, Jose B and Gopu S. Evaluation of antibacterial and DPPH radical scavenging activities of the leaf extracts and essential oil of *Coriandrum sativum* Linn. *World Journal of Pharmaceutical research* 2012; 1(3): 705-716.
- [268] Silva F, Ferreira S, Queiroz JA and Domingues FC. Coriander (*Coriandrum sativum* L.) essential oil: its antibacterial activity and mode of action evaluated by flow cytometry. *J Med Microbiol* 2011;60(Pt 10):1479-1486.
- [269] De Marco A, Senatore F, Capasso F, Iacobellis NS and Lo Cantore P. Antibacterial activity of *Coriandrum sativum* L. and *Foeniculum vulgare* Miller Var. *vulgare* (Miller) essential oils. *J Agric Food Chem* 2004; 52(26): 7862-7866.
- [270] Kubo I, Fujita K, Kubo A, Nihei K and Ogura T. Antibacterial activity of coriander volatile compounds against *Salmonella choleraesuis*. *J Agric Food Chem* 2004; 52(11): 3329-3332.
- [271] Rattanachaikunsopon P and Phumkhachorn P. Potential of coriander (*Coriandrum sativum* m) oil as a natural antimicrobial compound in controlling *Campylobacter jejuni* in raw meat. *Biosci Biotechnol Biochem* 2010;74(1):31-35.
- [272] Delaquis PJ, Stanich K, Girard B and Mazza G. Antimicrobial activity of individual and mixed fractions of dill, cilantro, coriander and eucalyptus essential oils. *Int J Food Microbiol* 2002;74(1-2):101-109.
- [273] Bogovac M, Karaman M, Janjušević L, Sudji J, Radovanović B, Novaković Z, Simeunović J and Božin B. Alternative treatment of vaginal infections- in vitro antimicrobial and toxic effects of *Coriandrum sativum* L. and *Thymus vulgaris* L essential oils. *J Appl Microbiol* 2015; 119(3):697-710.
- [274] Sourmaghi MH, Kiaee G, Golfakhrabadi F, Jamalifar H and Khanavi M. Comparison of essential oil composition and antimicrobial activity of *Coriandrum sativum* L. extracted by hydrodistillation and microwave-assisted hydrodistillation. *J Food Sci Technol* 2015;52(4):2452-2457.
- [275] Casetti F, Bartelke S, Biehler K, Augustin M, Schempp CM and Frank U. Antimicrobial activity against bacteria with dermatological relevance and skin tolerance of the essential oil from *Coriandrum sativum* L. fruits. *Phytother Res* 2012; 26(3): 420-424.
- [276] Gill AO, Delaquis P, Russo P and Holley RA. Evaluation of antilisterial action of cilantro oil on vacuum packed ham. *Int J Food Microbiol* 2002;73(1):83-92.
- [277] Khan DA, Hassan F, Ullah H, Karim S, Baseer A, Abid MA, Ubaidi M, Khan SA and Murtaza G. Antibacterial activity of *Phyllanthus emblica*, *Coriandrum sativum*, *Culinaris medic*, *Lawsonia alba* and *Cucumis sativus*. *Acta Pol Pharm* 2013; 70(5):855-859.
- [278] Duarte A, Ferreira S, Silva F and Domingues FC. Synergistic activity of coriander oil and conventional antibiotics against *Acinetobacter baumannii*. *Phytomedicine* 2012;19(3-4):236-238.
- [279] Usta C, Yildirim B and Turker AU. Antibacterial and antitumour activities of some plants grown in Turkey. *Biotechnology & Biotechnological Equipment* 2014; 28(2): 306-315.
- [280] Sattari FL, Nemati F, Mirzanegad S and Mahdavi SV. Chemical composition of essential oil and in vitro antibacterial and anticancer activity of the hydroalcolic extract from *Coronilla varia*. *The 17th National and 5th Iranian Biology Conference, Iran- Kerman* 2012.
- [281] Dehpour AA, Eslami B, Rezaie S, Hashemian SF, Shafie F and Kiaie M. Chemical composition of essential oil and in vitro antibacterial and anticancer activity of the hydroalcolic extract from *Coronilla varia*. *World Academy of Science, Engineering and Technology Pharmacological and Pharmaceutical Sciences* 2014; 1(12):1.

- [282] Al-Snafi AE. The pharmacological and toxicological effects of *Coronilla varia* and *Coronilla scorpioides*: A Review. *The Pharmaceutical and Chemical Journal* 2016, 3(2):105-114.
- [283] Zengin G, Uysal A, Gunes E and Aktumsek A. Survey of phytochemical composition and biological effects of three extracts from a wild plant (*Cotoneaster nummularia* Fisch. et Mey.): a potential source for functional food ingredients and drug formulations. *PLoS One* 2014; 9(11):e113527.
- [284] Al-Snafi AE. Pharmacological activities of *Cotoneaster racemiflorus*- A review. *The Pharmaceutical and Chemical Journal* 2016; 3(2): 98-104.
- [285] Suganthi G, Sripathy SK and Manian K. HPTLC and antibacterial analysis of extracts of *Cressa cretica* Linn. *Ancient Science of Life* 2008; XVII (3):1-14.
- [286] Al-Snafi AE. The chemical constituents and therapeutic importance of *Cressa cretica*- A review . *IOSR Journal of Pharmacy* 2016; 6(6): 39-46.
- [287] Naim N, Bouymajane A, Oulad El Majdoub Y, Ezrari S, Lahlali R, Tahiri A, Ennahli S, Laganà Vinci R, Cacciola F, Mondello L and Madani I. Flavonoid composition and antibacterial properties of *Crocus sativus* L. petal extracts. *Molecules*. 2022 Dec 26;28(1):186.
- [288] Al-Snafi AE. The pharmacology of *Crocus sativus*- A review. *IOSR Journal of Pharmacy* 2016; 6(6): 8-38.
- [289] Chouhan HS and Singh SK. Antibacterial activity of seed and flower parts of *Crotalaria juncea* Linn. *Am-Euras J Sci Res* 2010; 5 (3): 212-215.
- [290] Chouhan HS, Sahu AN and Singh. SK. Fatty acid composition, antioxidant, anti-inflammatory and antibacterial activity of seed oil from *Crotalaria juncea* Linn. *Journal of Medicinal Plant Research* 2011; 5(6): 984-991.
- [291] Shantaveera SHM, Kumara SHV and Upadhya P. Comparison study of the antimicrobial activity of seed protein extracts from four medicinal plants against *Xanthomonas oxanopodis* ver *punicae*. *World Journal of Pharmaceutical Research* 2015; 4(4): 948-949.
- [292] Al-Snafi AE. The contents and pharmacology of *Crotalaria juncea*- A review. *IOSR Journal of Pharmacy* 2016; 6(6): 77-86.
- [293] Bameri Z, Amini-Boroujeni N, Saeidi S and Bazi S. Antimicrobial activity of *Cuminum cuminum* against biofilm *E. coli*. *International Research Journal of Applied and Basic Sciences* 2013; 5 (10): 1232-1234.
- [294] Wanner J, Bail S, Jirovetz L, Buchbauer G, Schmidt E, Gochev V, Girova T, Atanasova T and Stoyanova A. Chemical composition and antimicrobial activity of cumin oil (*Cuminum cuminum*, Apiaceae). *Natural Product Communications* 2010; 5(9): 1355-1358 .
- [295] Chaudhary N, Husain SS and Ali M. Chemical composition and antimicrobial activity of cumin oil (*Cuminum cuminum*, Apiaceae). *Journal of Pharmacy and Pharmaceutical Sciences* 2014; 3(7): 1428-1441.
- [296] Farag RS, Daw ZY, Hewedi FM and El-Baroty GSA. Antimicrobial activity of some Egyptian spice essential oils. *Journal of Food Protection* 1989; 52(9): 665-667.
- [297] Stefanini MB, Figueiredo RO, Ming LC and Junior AF. Antimicrobial activity of the essential oils of some spice herbs. *Acta Horticulturae* 2003; 597:215-216.
- [298] Leopold J, Buchbauer G, Stoyanova AS, Georgiev EV and Damianova ST. Composition, quality control and antimicrobial activity of the essential oil of cumin (*Cuminum cuminum* L.) seeds from Bulgaria that had been stored for up to 36 years. *International Journal of Food Science & Technology* 2005; 40(3): 305-310.
- [299] Fakoor MH and Rasooli I. Pathogen control by antioxidative characteristics of *Cuminum cuminum* and *Rosmarinus officinalis* essential oils. *Acta Horticulturae* 2008; 786: 125-136.
- [300] Manuel V, Ruiz-Navajas Y, Fernandez-Lopez J and Perez-Alvarez JA. Antibacterial activity of different essential oils obtained from spices widely used in Mediterranean diet. *International Journal of Food Science & Technology* 2008; 43(3): 526-531.
- [301] Hajlaoui H, Mighri H, Noumi E, Snoussi M, Trabelsi N, Ksouri R and Bakhrouf A. Chemical composition and biological activities of Tunisian *Cuminum cuminum* L. essential oil: a high effectiveness against *Vibrio* spp. strains. *Food and Chemical Toxicology* 2010; 48(8/9): 2186-2192.
- [302] Mahmoudi H, Rahnama K and Arabkhani MA. Antibacterial effect essential oil and extracts of medicinal plant on the causal agents of bacterial canker and leaf spot on the stone fruit tree. *Journal of Medicinal Plants* 2010; 9(36): 34-42.

- [303] Oroojalian F, Kasra KR, Azizi M and Bassami MR. Synergistic antibacterial activity of the essential oils from three medicinal plants against some important food-borne pathogens by microdilution method. *Iranian Journal of Medicinal and Aromatic Plants* 2010; 26(2): 133-146.
- [304] Basmacioglu MH, Özdemir P and Hames EE. Chemical compositions and antibacterial activity of the essential oils from some plant species. *Ege Üniversitesi Ziraat Fakültesi Dergisi* 2011; 48(1): 11-18.
- [305] Sheikh MI, Islam S, Rahman A, Rahman M, Rahim A and Alam F. Control of some human pathogenic bacteria by seed extracts of cumin (*Cuminum cyminum* L). *Agriculturae Conspectus Scientificus* 2010; 75 (1):39-44.
- [306] Iacobellis NS, Lo Cantore P, Capasso F and Senatore F. Antibacterial activity of *Cuminum cyminum* L. and *Carum carvi* L. essential oils. *J Agric Food Chem* 2005; 53(1): 57-61.
- [307] Shayegh S, Rasooli I, Taghizadeh M and Astaneh SD. Phytotherapeutic inhibition of supragingival dental plaque. *Nat Prod Res* 2008; 22(5):428-439.
- [308] Tavakoli HR, Mashak Z, Moradi B and Sodagari HR. Antimicrobial activities of the combined use of *Cuminum cyminum* L. essential oil, nisin and storage temperature against *Salmonella typhimurium* and *Staphylococcus aureus* in vitro. *Jundishapur J Microbiol* 2015; 8(4): e24838.
- [309] Allahghadri T, Rasooli I, Owlia P, Nadooshan MJ, Ghazanfari T, Taghizadeh M and Astaneh SD. Antimicrobial property, antioxidant capacity, and cytotoxicity of essential oil from cumin produced in Iran. *J Food Sci* 2010; 75(2): H54-61.
- [310] Toroglu S. In-vitro antimicrobial activity and synergistic/antagonistic effect of interactions between antibiotics and some spice essential oils. *Journal of Environmental Biology* January 2011; 32 (1): 23-29.
- [311] Al-Snafi AE. The pharmacological activities of *Cuminum cyminum* - A review. *IOSR Journal of Pharmacy* 2016; 6(6): 46-65.
- [312] Derakhshan S, Sattari M and Bigdeli M. Effect of subinhibitory concentrations of cumin (*Cuminum cyminum* L) seed essential oil and alcoholic extract on the morphology, capsule expression and urease activity of *Klebsiella pneumoniae*. *Int J Antimicrob Agents* 2008; 32(5):432-436.
- [313] Awan UA, Andleeb S, Kiyani A, Zafar A, Shafique I, Riaz N, Azhar MT and Uddin H. Antibacterial screening of traditional herbal plants and standard antibiotics against some human bacterial pathogens. *Pak J Pharm Sci* 2013; 26(6): 1109-1116.
- [314] Shahid W, Durrani R, Iram S, Durrani M and Khan FA. Antibacterial activity in vitro of medicinal plants. *Sky Journal of Microbiology Research* 2013; 1(2): 5-21.
- [315] Al-Othman AM, Hussain I, Khan H, Ur Rehman M, Abdeltawab AA, Ullah R, Rohullah, Noor S and Talha M. Phytochemical analysis and biological activities of selected medicinal plants. *Journal of Medicinal Plants Research* 2012;. 6(23): 4005-4010.
- [316] Al-Snafi AE. Medical importance of *Cupressus sempervirens*- A review. *IOSR Journal of Pharmacy* 2016; 6(6): 66-76.
- [317] Chaudhary HJ, Shahid W, Bano A, Ullah F, Munis F, Fahad S and Ahmad I. *In vitro* analysis of *Cupressus sempervirens* L plant extracts antibacterial activity. *Journal of Medicinal Plants Research* 2012; 6(2): 273-276.
- [318] Selim SA, E Adam M, Hassan SM and Albalawi AR. Chemical composition, antimicrobial and antibiofilm activity of the essential oil and methanol extract of the Mediterranean cypress (*Cupressus sempervirens* L). *BMC Complementary and Alternative Medicine* 2014, 14:179-186.
- [319] Boukhris M, Regane G, Yangui T, Sayadi S and Bouaziz M. Chemical composition and biological potential of essential oil from Tunisian *Cupressus sempervirens* L. *Journal of Arid Land Studies* 2012; 22(1): 329-332.
- [320] Toroglu S. *In vitro* antimicrobial activity and antagonistic effect of essential oils from plant species. *Journal of Environmental Biology* 2007; 28(3): 551-559.
- [321] Mahmood Z, Ahmed I, Saeed M and Sheikh MA. Investigation of physico-chemical composition and antimicrobial activity of essential oil extracted from lignin-containing *Cupressus sempervirens*. *BioResources* 2013;8(2): 1625-1633.
- [322] Zhang J, Rahman AA, Jain S, Jacob MR, Khan SI, Tekwani BL and Ilias M. Antimicrobial and antiparasitic abietane diterpenoids from *Cupressus sempervirens*. *Neuropsychiatric Disease and Treatment* 2012; 2:1-6.

- [323] Biswas SK, Chowdhury, A Das J, Karmakar UK, Raihan SZ, Das AC, Hannan MA, Dinar MA, Monsur Hassan MJ, Hossain M I and Farhad MR. Phytochemical investigation and chromatographic evaluation with antimicrobial and cytotoxic potentials of *Cuscuta epithymum*. *International Journal of Pharmacology* 2012; 8(5): 422-427.
- [324] Al-Snafi AE. Traditional uses, constituents and pharmacological effects of *Cuscuta planiflora*. *The Pharmaceutical and Chemical Journal* 2016; 3(4): 215-219.
- [325] Fattouch S, Caboni P, Coroneo V, Tuberoso CI, Angioni A, Dessi S, Marzouki N and Cabras P. Antimicrobial activity of Tunisian quince (*Cydonia oblonga* Miller) pulp and peel polyphenolic extracts. *J Agric Food Chem* 2007; 55(3): 963-969.
- [326] Al-Khazraji SK. Phytochemical screening and antibacterial activity of the crude extract of *Cydonia oblonga* seeds. *Global Advanced Research Journal of Microbiology* 2013; 2(8): 137-140.
- [327] Alizadeh H, Shapouri R, Shokri R and Dolatyari L. Antimicrobial effect of quince (*Cydonia oblonga*) fruit and seed, extracts on some dermato-infectious bacteria. *The Quarterly Journal of Animal Physiology and Development (Quarterly Journal of Biological Sciences)* 2011; 4(1): 87-92.
- [328] Alizadeh H, Rahnama M, Semnani SN and Hajizadeh N. Detection of compounds and antibacterial effect of quince (*Cydonia oblonga* Miller) extracts *in vitro* and *in vivo*. *Journal of Biologically Active Products from Nature* 2013; 3(5-6): 303-309.
- [329] Silva FG and Oliveira GL. Popular knowledge and antimicrobial activity of *Cydonia oblonga* Mill. (Rosaceae). *Rev Bras Plantas Med* 2013; 15(1): 98-103.
- [330] Zsivanovits G, Szigeti F and Mohacsi-Farkas C. Investigation of antimicrobial inhibition effect of quince fruit extract by rapid impedance method. *Храни, технологии и здраве (Food, Technologies & Health)*; Food Research and Development Institute, International Scientific-Practical Conference 2013.
- [331] Babarikina A, Nikolajeva V and Babarykin D. Anti-*Helicobacter* activity of certain food plant extracts and juices and their composition *in vitro*. *Food and Nutrition Sciences* 2011; 2: 868-877.
- [332] Al-Snafi AE. The medical importance of *Cydonia oblonga*- A review. *IOSR Journal of Pharmacy* 2016; 6(6): 87-99.
- [333] Khadri A, Neffati M, Smiti S, Falé P, Rosa A, Lino L, Luisa M, Serralheiro M, Eduarda M and Araújo M. Antioxidant, antiacetylcholinesterase and antimicrobial activities of *Cymbopogon schoenanthus* L. Spreng (lemon grass) from Tunisia. *LWT - Food Science and Technology* 2010; 43(2): 331-336.
- [334] Mohammad Ali RM. Antibacterial and phytochemical screening *Lepidium sativum* and *Cymbopogon schoenanthus*. BSc thesis, Faculty of Science, Khartoum University 2012.
- [335] EL-Kamali HH and EL-amir MY. Antibacterial activity and phytochemical screening of ethanolic extracts obtained from selected Sudanese medicinal plants. *Current Research Journal of Biological Sciences* 2010; 2(2): 143-146.
- [336] Sabry A, El-Zayat SA, El-Said1 AHM, Abdel-Motaal FF and Magraby TA. Mycoflora associated with Halfa-bar leaves and stems (*Cymbopogon schoenanthus* L. Spreng), *in vitro* the antimicrobial activity of the plant leaves and stems secondary metabolites. *Int J Curr Microbiol App Sci* 2014; 3(2): 874-882.
- [337] Pranita K, Sawarkar HA, Mishra K K. Antibacterial evaluation of ethanolic extract of *Cynodon dactylon* (L.) Pers. *Global Journal of Research on Medicinal Plants & Indigenous Medicine* 2012; 1(6): 218-224.
- [338] Rao As, Nayanatara AK, Rashmi Kaup S, Sharma A, Kumar B, Vaghasiya BD, Kishan K and Pai SR. Potential antibacterial and antifungal activity of aqueous extract of *Cynodon dactylon*. *IJPSR* 2011; 2(11): 2889-2893.
- [339] Renu S and Prakash NB. Screening of antibacterial activity of hydroalcoholic extract of *Cynodon dactylon* (L.). *Int J Res Ayurveda Pharm* 2012; 3(6):827-829.
- [340] Abdullah S, Gobilik J and Chong KP. *In vitro* antimicrobial activity of *Cynodon dactylon* (L) Pers (bermuda) against selected pathogens. *Developments in Sustainable Chemical and Bioprocess Technology* 2013 :227-237.
- [341] Chaudhari Y, Mody HR and Acharya VB. Antibacterial activity of *Cynodon dactylon* on different bacterial pathogens isolated from clinical samples. *International Journal of Pharmaceutical Studies and Research* 2011: 16-20.
- [342] Kanimozhi D and Ratha bai V. Evaluation of anti microbial activity of *Cynodon dactylon*. *International Journal of Research in Pharmacy and Science* 2012;2(2): 34-43.
- [343] Al-Snafi AE. Chemical constituents and pharmacological effects of *Cynodon dactylon*- A review. *IOSR Journal of Pharmacy* 2016; 6(7): 17-31.

- [344] Rahman S. *Cynodon dactylon*: Antimicrobial potential of crude extract as valuable medicinal plant. Bachelor thesis, Microbiology Program Department of Mathematics and Natural Sciences BRAC University 2014.
- [345] Suresh K, Deepa P, Harisaranraj R and Vaira Achudhan V. Antimicrobial and phytochemical investigation of the leaves of *Carica papaya* L, *Cynodon dactylon* L Pers, *Euphorbia hirta* L, *Melia azedarach* L and *Psidium guajava* L. *Ethnobotanical Leaflets* 2008; 12: 1184-1191.
- [346] Bisht A, Bisht GRS, Singh M, Gupta R and Singh V. Chemical composition and antimicrobial activity of essential oil of tubers of *Cyperus rotundus* Linn. collected from Dehradun (Uttarakhand). *International Journal of Research in Pharmaceutical and Biomedical Sciences* 2011; 2(2); 661-665.
- [347] Sharma SK and Singh AP. Antimicrobial investigations on rhizomes of *Cyperus rotundus* Linn. *Der Pharmacia Lettre* 2011; 3(3):427-431.
- [348] Yu HH, Lee DH, Seo SJ and You YO. Anticariogenic properties of the extract of *Cyperus rotundus*. *Am J Chin Med* 2007; 35: 497-505.
- [349] Al-Snafi AE. A review on *Cyperus rotundus* A potential medicinal plant. *IOSR Journal Of Pharmacy* 2016; 6(7): 32-48.
- [350] Kumar S, Kumar K, and Gautam SS. Antibacterial evaluation of *Cyperus rotundus* Linn. root extracts against respiratory tract pathogens. *African Journal of Pharmacology and Therapeutics* 2014; 3(3): 95-98.
- [351] Muthu K, Hema M, Nagaraj S and Rengasamy R. *In vitro* antibacterial potential, phytochemical characterization of *Cyperus rotundus* flower extract. *International Journal of Natural Products Research* 2014; 4(1): 6-8.
- [352] Nima ZA, Jabier MS, Wagi RI and Hussain HA. Extraction, identification and antibacterial activity of *Cyperus* oil from Iraqi *Cyperus rotundus*. *Eng & Technology* 2010; 2(1): 1156-1163.
- [353] Ahmad M, Mahayrookh, Mehjabeen, Bin Rehman A and Jahan N. Analgesic, antimicrobial and cytotoxic effect of *Cyperus rotundus* ethanolic extract. *Pakistan Journal of Pharmacology* 2012; 29(2):7-13.
- [354] Kayed AM, EL- Sayed ME and El-Hela AA. New epoxy megastigmane glucoside from *Dactyloctenium aegyptium* L. P. Beauv Wild (Crowfootgrass). *Journal of Scientific and Innovative Research* 2015; 4(6): 237-244.
- [355] Jebastella J and Reginald AM. Screening of antibacterial activity in medicinal grass (*Dactyloctenium aegyptium*) using two extracts. *International Journal of Recent Scientific Research* 2015; 6(7): 5046-5048.
- [356] Kumar V, Banu RF, Begum S, Kumar MS and Mangilal T. Evaluation of antimicrobial activity of ethanolic extract of *Dactyloctenium aegyptium*. *IJPR* 2015; 5(12): 338-343.
- [357] Abdallah Emad M, El-Ghazali Gamal E. Screening for antimicrobial activity of some plants from Saudi folk medicine. *Glob J Res Med Plants Indig Med* 2013; 2(4): 189-197.
- [358] Al-Snafi AE. The pharmacological potential of *Dactyloctenium aegyptium*- A review. *Indo Am J P Sci* 2017; 4(01): 153-159.
- [359] Behera PC, Verma SM, Kumar PM, Das NB, Mishra PM and Baliarsingh S. Anti-inflammatory and anti-microbial activity of chalcone from *Dalbergia sissoo* Roxb leaves. *American Journal of Phytomedicine and Clinical Therapeutics* 2013;1(2): 186-194.
- [360] Aly IM, El-Sayed AB, Gohar YM and Salem MZM. The value-added uses of *Ficus retusa* and *Dalbergia sissoo* grown in Egypt: GC/MS analysis of extracts. *J Forest & Industries* 2013; 2(3): 34-41.
- [361] Yadav H, Yadav M, Jain S, Bhardwaj A, Singh V, Parkash O and Marotta F. Antimicrobial property of a herbal preparation containing *Dalbergia sissoo* and *Datura tramonium* with cow urine against pathogenic bacteria. *Int J Immunopathol Pharmacol* 2008; 21(4):1013-1020.
- [362] Hussain M, Ullah Khan MR, Raza SM, Aziz A, Bakhsh H and Majeed A. Assessment of the antimicrobial potential of *Dalbergia sissoo* against eight pathogenic bacteria – an *in vitro* study. *International Journal of Pharma Sciences* 2014; 4(5): 702-706.
- [363] Al-Snafi AE. Chemical constituents and pharmacological effects of *Dalbergia sissoo* - A review. *IOSR Journal of Pharmacy* 2017; 7(2): 59-71.
- [364] Javidnia K, Miri R, Najafi RB and Jahromi NK. A preliminary study on the biological activity of *Daphne mucronata* Royle. *DARU Journal of Faculty of Pharmacy, Tehran University of Medical Sciences* 2003; 11(1): 28-31.

- [365] Abidi SH, Ahmed K, Sherwani SK and Kazmi SU. Reduction and removal of *Pseudomonas aeruginosa* biofilm by natural agents. Chemical and Pharmaceutical Sciences 2014; 5 (1): 28-34.
- [366] Al-Snafi AE. Therapeutic and biological activities of *Daphne mucronata* - A review. Indo Am J P Sci 2017; 4(02): 235-240.
- [367] Deveoglu O, Muhammed A, Fouad A, Torgan E and Karadag R. Chromatographic analysis of natural pigments produced from *Datisca cannabina* L. and *Quercus infectoria* Oliv. plants and their antimicrobial activity. J Chem Soc Pak 2012; 34(4): 890-895.
- [368] Dhiman A, La R, Bhan M, Dhiman B and Hooda A. Plebeian assessment of anti microbial and *in vitro* antioxidant zest of *D. fastuosa* L. seeds. Journal of Pharmaceutical and Scientific Innovation 2012; 1(4); 49-53.
- [369] Okwu DE and Igara EC. Isolation, characterization and antibacterial activity of alkaloid from *D. mete* Linn leaves African Journal of Pharm and Pharmacology 2009; 3(5): 277 – 781.
- [370] Salma Sk, Lalitha Ch, Venkatarameshwar K, Jagadeesh Babu S and Vijitha M. Evaluation of antipathogenic effect of *Datura metal* Linn. leaf extract on enterobacter species. AJCPR 2015; 3(2): 306–309.
- [371] Al-Snafi AE. Medical importance of *Datura fastuosa* (syn: *Datura metel*) and *Datura stramonium* - A review. IOSR Journal of Pharmacy 2017; 7(2):43-58.
- [372] Shagal MH, Modibbo UU and Liman AB. Pharmacological justification for the ethnomedical use of *Datura stramonium* stem-bark extract in treatment of diseases caused by some pathogenic bacteria. Int Res Pharm Pharmacol 2012; 2(1): 16-19.
- [373] Sharma RA, Sharma P and Yadav A. Antimicrobial screening of sequential extracts of *Datura stramonium* L. Int J Pharm Pharm Sci 2013; 5(2): 401-404.
- [374] Gul H, Qaisrani RN, Khan MA, Hassan S and Younis N. Antibacterial and antifungal activity of different extracts of *Datura stramonium* (branches and leaves sample). Journal of Biotechnology and Pharmaceutical Research 2012; 3(9): 141-148.
- [375] Sreenivasa S, Vinay K and Mohan NR. Phytochemical analysis, antibacterial and antioxidant activity of leaf extract of *Datura stramonium*. International Journal of Science Research 2012;1(2): 83-86.
- [376] Iranbakhsh A, Ebadi M and Bayat M. The inhibitory effects of plant methanolic extract of *Datura stramonium* L. and leaf explant callus against bacteria and fungi. Global Veterinaria 2010; 4 (2): 149-155.
- [377] Sharma A, Patel VK and Chaturvedi AN. Vibriocidal activity of certain medicinal plants used in Indian folklore medicine by tribals of Mahakoshal region of central India. Indian J Pharmacol 2009; 41(3): 129-133.
- [378] Gachande BD, Khillare EM. *In vitro* evaluation of *Datura* species for potential antimicrobial activity. Bioscience Discovery 2013; 4(1):78-81.
- [379] Ahmed AA, Bishr MM, El-Shanawany MA, Attia EZ, Ross SA and Pare PW. Rare trisubstituted sesquiterpenes daucanes from the wild *Daucus carota*. Phytochemistry 2005; 66:1680–1684.
- [380] Al-Snafi AE. Nutritional and therapeutic importance of *Daucus carota*- A review. IOSR Journal of Pharmacy 2017; 7(2): 72-88.
- [381] Kumarasamy Y, Nahar L, Byres M, Delazar A and Sarker SD. The assessment of biological activities associated with the major constituents of the methanol extract of 'wild carrot' (*Daucus carota* L) seeds. J Herb Pharmacother 2005; 5(1):61-72.
- [382] Marzouki H, Khaldi A, Falconieri D, Piras A, Marongiu B, Mollicotti P and Zanetti S. Essential oils of *Daucus carota* subsp. *carota* of Tunisia obtained by supercritical carbon dioxide extraction. Nat Prod Commun 2010; 5(12):1955-1958.
- [383] Rokbeni N, M'rabet Y, Dziri S, Chaabane H, Jemli M, Fernandez X and Boulila A. Variation of the chemical composition and antimicrobial activity of the essential oils of natural populations of Tunisian *Daucus carota* L. (Apiaceae). Chem Biodivers 2013; 10(12): 2278-2290.
- [384] Alves-Silva JM, Zuzarte M, Gonçalves MJ, Cavaleiro C, Cruz MT, Cardoso Sm and Salgueiro L. New claims for wild carrot (*Daucus carota* subsp. *carota*) essential oil. Evidence-Based Complementary and Alternative Medicine 2016; <http://dx.doi.org/10.1155/2016/9045196>

- [385] Pavlyuk I, Stadnytska N, Jasicka-Misiak I, Górka B, Wieczorek PP and Novikov V. A study of the chemical composition and biological activity of extracts from wild carrot (*Daucus carota* L.) seeds waste. *Research Journal of Pharmaceutical, Biological and Chemical Sciences* 2015; 6(2): 603-611.
- [386] Rossi PG, Bao L, Luciani A, Panighi J, Desjobert JM, Costa J, Casanova J, Bolla JM. and Berti L. (E)-methylisoeugenol and elemicin: Antibacterial components of *Daucus carota* L. essential oils against *Campylobacter jejuni*. *Journal of Agricultural and Food Chemistry* 2007; 55: 7332-7336.
- [387] Deng W and Sung WL. Three new C19-diterpenoid alkaloids, delbrunine, delbruline and delbrusine from *Delphinium brunonianum* Royle. *Heterocycles* 1986; 24(4): 873-876.
- [388] Subramaniam S, Keerthiraja M and Sivasubramanian A. Synergistic antibacterial action of β -sitosterol-D-glucopyranoside isolated from *Desmostachya bipinnata* leaves with antibiotics against common human pathogens. *Rev Bras Farma* 2014; 24: 44-50.
- [389] Shakila R, Meeradevi Sri P, Arul Antony S and Gopakumar K. Antimicrobial studies on *Desmostachya bipinnata* root stock. *Journal of Pharmaceutical, Chemical and Biological Sciences* 2014; 2(3):197-201.
- [390] Zain ME, Awaad AS, Othman MRA and Al-Dosary SK. Antibacterial, antifungal activity and phytochemical analysis of some desert plants against human pathogenic bacteria and fungi. *Life Sci J* 2014; 11: 343-349.
- [391] Al-Snafi AE. Pharmacological and therapeutic importance of *Desmostachya bipinnata*- A review. *Indo Am J P Sci* 2017; 4(01): 60-66.
- [392] Kumar Ak, Sharvane S, Patel J and Choudhary RK. Chemical composition and antimicrobial activity of the essential oil of *Desmostachya bipinnata* linn. *Int J Phytomedicine* 2011; 2(4): 436.
- [393] Packialakshmi N and Alwin PG. Analysis of phytochemical and high performance liquid chromatography in *Desmostachya bipinnata*. *BMR Biotechnology* 2014; 1(1):1-6.
- [394] Mohammed MJ and Al-Bayati FA. Isolation and identification of antibacterial compounds from *Thymus kotschyanus* aerial parts and *Dianthus caryophyllus* flower buds. *Phytomedicine* 2009; 16: 632-637.
- [395] Bonjar S. Evaluation of antibacterial properties of some medicinal plants used in Iran. *J Ethnopharmacol* 2004; 94:301-305.
- [396] Bonjar GHS, Nik AK, Heydari MR, Ghasemzadeh MH, Farrokhi PR, Moein MR, Mansouri S and Foroumadi A. Anti-pseudomona and anti-bacilli activity of some medicinal plants of Iran. *DARU* 2003;11 (4): 157-163.
- [397] Castillo-Juarez, I, Gonzalez V, Jaime-Aguilar H, Martinez G, Linares E, Bye R and Romero I. Anti-*Helicobacter pylori* activity of plants used in mexican traditional medicine for gastrointestinal disorders. *Ethnopharmacol* 2009; 122: 402-405.
- [398] Al-Snafi AE. Chemical contents and medical importance of *Dianthus caryophyllus*- A review. *IOSR Journal of Pharmacy* 2017; 7(3): 61-71.
- [399] Naidoo R, Patel M, Gulube Z and Fenyvesi I. Inhibitory activity of *Dodonaea viscosa* var. *angustifolia* extract against *Streptococcus mutans* and its biofilm. *Journal of Ethnopharmacology* 2012; 144(1): 171-174.
- [400] Al-Snafi AE. A review on *Dodonaea viscosa*: A potential medicinal plant. *IOSR Journal of Pharmacy* 2017; 7(2): 10-21.
- [401] Khurram M. Studies on the isolation and characterization of secondary metabolites from *Dodonaea viscosa* and *Quercus baloot* and their potential as antibacterial agents. PhD thesis, Dept. Microbiology, Quaid-I-Azam University, Islamabad- Pakistan 2010.
- [402] Jeya SJ, Santhi V, Borgia VJF and Devi PS. *In vitro* antibacterial activity, phytochemical screening and FT- IR analysis of *Dodonaea viscosa* and *Adhatoda vasica*. *Asian Journal of Biochemical and Pharmaceutical Research* 2014; 2(4): 289-298.
- [403] Nasrullah S, Rahman K, Ikram M, Nisar M and Khan I. Screening of antibacterial activity of medicinal plants. *Int J Pharm Sci Rev Res* 2012; 14(2): 25-29.
- [404] Kalaivani S and Padmavathy. Comparative anti bioflim activity studies on the leaves of *Wrightia tinctoria* and *Dodonaea viscosa*. *Int J Curr Microbiol App Sci* 2016) Special Issue-3: 88-90.
- [405] Mothana RAA, Abdo SAA, Hasson S, Althawab FMN, Alaghbari SAZ and Lindequist U. Antimicrobial, antioxidant and cytotoxic activities and phytochemical screening of some Yemeni medicinal plants. *eCAM* 2010;7(3): 323-331.

- [406] Kannaian UPN, Selvci CR, Sasikala V and Bhuvaneswari S. Phytochemistry and bio-efficacy of a weed, *Dodonaea viscosa*. Int J Pharm Pharm Sci 2012; 4(2): 509-512.
- [407] Esmaeel ZA and Al-Jobori KM. Antimicrobial effect of *Dodonaea viscosa* Jacq extracts against some pathogenic microorganisms. Iraqi Journal of Science 2011; 52(4):425-439.
- [408] Al-baker SM, Al-gasha'a1 FAS, Hanash SH and Al-Hazmi AA. Prevalence and evaluation of antimicrobial activity of *Dodonaea viscosa* extract and antibacterial agents against *Salmonella* Spp. isolated from poultry. Sch Acad J Biosci 2014; 2(12B): 901-908.
- [409] Khurram M, Khan MA, Hameed A, Abbas N, Qayum A and Inayat H. Antibacterial activities of *Dodonaea viscosa* using contact bioautography technique. Molecules 2009; 14: 1332-1341.
- [410] Mehmood A, Murtaza G and Nasir M. Antibacterial and antifungal activity of *Dodonaea viscosa* (L.) Jacq., a wild plant of Azad Jammu and Kashmir. Int J of Biosciences 2013; 3(9): 1-7.
- [411] Priya S and Jenifer S. Antibacterial activity of leaf and flower extract of *Lablab purpureus* against clinical isolates of *Staphylococcus aureus*. Journal of Drug Design & Discovery 2014;1(3): 1-3.
- [412] Nasrin F, Bulbu IJ, Begum Y and Khanum S. *In vitro* antimicrobial and cytotoxicity screening of n-hexane, chloroform and ethyl acetate extracts of *Lablab purpureus* (L.) leaves. Agric Biol J N Am 2012; 3(2): 43-48.
- [413] Al-Snafi AE. The pharmacology and medical importance of *Dolichos lablab* (*Lablab purpureus*)- A review. IOSR Journal of Pharmacy 2017; 7(2): 22-30.
- [414] Fultariya CR. Isolation, characterization and possible application of active ingredients from minor millets on type-2 diabetes. MSc thesis, Maharaja Krishnakumarsinhji Bhavnagar University 2014.
- [415] Mehta JP and Vadia SH. *In vitro* antioxidant activity and antibacterial assay of minor millet extracts. Journal of Chemical and Pharmaceutical Research 2014; 6(7): 2343-2350.
- [416] Al-Snafi AE. Pharmacology of *Echinochloa crus-galli* - A review. Indo Am J P Sci 2017; 4(01): 117-122.
- [417] Sener B, Bingo F, Erdogan I, Bowers WS and Evans PH. Biological activities of some Turkish medicinal plants. Pure and Appl Chem 1998; 70(2): 403-406.
- [418] Morteza-Semnani K, Saeedi M and Akbarzadeh M. Chemical composition and antimicrobial activity of essential oil of *Echium italicum* L. Journal of Essential Oil Bearing Plants 2009; 12(5): 557-561.
- [419] Al-Snafi AE. Pharmacological and therapeutic importance of *Echium italicum*- A review. Indo Am J P Sci 2017; 4(02): 394-398.
- [420] Ghanem S and El-Magly UIA. Antimicrobial activity and tentative identification of active compounds from the medicinal *Ephedra alata* male plant. J T U Med Sc 2008; 3(1): 7-15.
- [421] Al-Snafi AE. Therapeutic importance of *Ephedra alata* and *Ephedra foliata*- A review. Indo Am J P Sci 2017; 4(02): 399-406.
- [422] Chebouat E, Dadamoussa B, Gharabli S, Gherraf N, Allaoui M, Cheriti A, Lahham A and Zellagui A. Assessment of antimicrobial activity of flavonoids extract from *Ephedra alata*. Der Pharmacia Lettre 2014; 6 (3):27-30.
- [423] Al-Qarawi AA, Abd-Allah EF and Abeer H. *Ephedra alata* as biologically-based strategy inhibit aflatoxigenic seedborne mold. African Journal of Microbiology Research Vol. 2011; 5(16):. 2297-2303.
- [424] Aldaas SA. Cytotoxic and antibacterial activity of an extract from a Saudi traditional medicinal plant *Equisetum arvense*. MSc thesis, King Abdullah University of Science and Technology, Thuwal 2011.
- [425] Uslu ME, Erdogan I, Oguzbayraktar O and Ates M. Optimization of extraction conditions for active components in *Equisetum arvense* extract. Romanian Biotechnological Letters 2013; 18(2): 8115-8131.
- [426] Al-Snafi AE. The pharmacology of *Equisetum arvense*- A review. IOSR Journal of Pharmacy 2017; 7(2): 31-42.
- [427] Geetha RV, Lakshmi T and Roy A. *In vitro* evaluation of antibacterial activity of *Equisetum arvense* Linn on urinary tract pathogens. International Journal of Pharmacy and Pharmaceutical Sciences 2011; 3(4): 323-325.
- [428] Sinha NS. *In vitro* antibacterial activity of ethanolic extract of *Equisetum arvense* L. International Journal of Pharmaceutical and Biological Research 2012; 3(1): 19121.
- [429] Biswas K and Sinha SN. Evaluation of antibacterial activity of *Conyza canadensis* (L.) Cronquist collected from Nainital, Uttarakhand, India. International Journal of Universal Pharmacy and Bio Sciences 2014; 3(1): 46-53.

- [430] Shakirullah M, Ahmad H, Shah MR, Ahmad I, Ishaq M, Khan N, Badshah A and Khan I. Antimicrobial activities of conyzolide and conyzoflavone from *Conyza canadensis*. Journal of Enzyme Inhibition and Medicinal Chemistry 2011; 26(4): 468–471.
- [431] Al-Snafi AE. Pharmacological and therapeutic importance of *Erigeron canadensis* (Syn: *Conyza canadensis*). Indo Am J P Sci 2017; 4(02): 248-256.
- [432] Shah NZ, Khan MA, Muhammad N and Azeem S. Antimicrobial and phytotoxic study of *Conyza canadensis*. Middle-East Journal of Medicinal Plants Research 2012; 1(3): 63-67.
- [433] Veres K, Csupor-Löffler B, Lázár a and Hohmann J. Antifungal activity and composition of essential oils of *Conyza canadensis* herbs and roots. Scientific World Journal 2012; doi: 10.1100/2012/489646
- [434] Stojanović-Radić Z, Čomić L, Radulović N, Dekić M, Randelović V and Stefanović. O. Chemical composition and antimicrobial activity of *Erodium* species: *E. ciconium* L., *E. cicutarium* L., and *E. absinthoides* Willd. (Geraniaceae). Chemical Papers 2010; 64(3): 368-377.
- [435] Al-Snafi AE. Therapeutic potential of *Erodium cicutarium* - A review. Indo Am J P Sci 2017; 4(02): 407-413.
- [436] Al-Snafi AE. A review on *Erodium cicutarium*: A potential medicinal plant. Indo Am J P Sci 2017; 4(01): 110-116.
- [437] Makki R, Dirani ZE, Rammal H, Sweidan A, Al bazzal A and Chokr A. Antibacterial activity of two Lebanese plants: *Eryngium creticum* and *Centranthus longiflorus*. J Nanomed Nanotechnol 2015; 6:315.
- [438] Ali-Shtayeh MS, Yaghmour RMR, Faidi YR, Salem K and Al-Nuri MA. Antimicrobial activity of 20 plants used in folkloric medicine in the Palestinian area. J Ethnopharmacol 1998; 60: 265–271.
- [439] Celik A, Aydınlik N and Arslan I. Phytochemical constituents and inhibitory activity towards methicillin- resistant *Staphylococcus aureus* strains of *Eryngium* species (Apiaceae). Chemistry & Biodiversity 2011; 8: 454-459.
- [440] Al-Snafi AE. Chemical constituents and pharmacological effects of *Eryngium creticum*- A review. Indo Am J P Sci 2017; 4(01): 67-73.
- [441] Trivedi NA and Hotchandani SC. A study of the antimicrobial activity of oil of Eucalyptus. Indian J Pharmacol 2004; 36(2): 93-95.
- [442] Rahimi-Nasrabadi M, Nazarian S, Farahani H, Koohbijari GRF, Ahmadi F and Batooli H. Chemical composition, antioxidant, and antibacterial activities of the essential oil and methanol extracts of *Eucalyptus largiflorens* F. Muell. International Journal of Food Properties 2013; 16(2): 369-381.
- [443] Al-Snafi AE. The pharmacological and therapeutic importance of *Eucalyptus* species grown in Iraq. IOSR Journal of Pharmacy 2017; 7(3): 72-91.
- [444] Safaei-Ghomi J and Ahd AA. Antimicrobial and antifungal properties of the essential oil and methanol extracts of *Eucalyptus largiflorens* and *Eucalyptus intertexta*. Pharmacogn Mag 2010; 6(23): 172–175.
- [445] Salman ED, AL-Saedi AJH, AL-Kazzaz AGhM and Yahya SS. The effect of aqueous extract and essential oils of the leaves of *Eucalyptus incrassate* on β - lactam resistant *Staphylococcus aureus*. Ibn Al-Haitham J for Pure & Appl Sci 2014; 17(1): 76-82.
- [446] Pandey B and Singh S. Evaluation of antimicrobial potential of *Eucalyptus camaldulensis* L. J Pharm Chem Biol Sci 2014; 2(3):166-171.
- [447] El-Mahmood MA. Antibacterial potential of crude leaf extracts of *Eucalyptus camaldulensis* against some pathogenic bacteria. African Journal of Plant Science 2010; 4(6): 202-209.
- [448] Salem MZ, Ashmawy NA, Elansary HO and El-Settawy AA. Chemotyping of diverse *Eucalyptus* species grown in Egypt and antioxidant and antibacterial activities of its respective essential oils. Nat Prod Res 2015;29(7):681-685.
- [449] Rasooli I, Shayegh S and Astaneh S. The effect of *Mentha spicata* and *Eucalyptus camaldulensis* essential oils on dental biofilm. Int J Dent Hyg 2009; 7(3):196-203.
- [450] Knezevic P, Aleksic V, Simin N, Svircev E, Petrovic A and Mimica-Dukic N. Antimicrobial activity of *Eucalyptus camaldulensis* essential oils and their interactions with conventional antimicrobial agents against multi-drug resistant *Acinetobacter baumannii*. J Ethnopharmacol 2016; 178:125-136.
- [451] Bachir RG and Benali M. Antibacterial activity of essential oil of north west Algerian *Eucalyptus camaldulensis* against *Escherichia coli* and *Staphylococcus aureus*. Journal of Coastal Life Medicine 2014; 2(10): 799-804.

- [452] Adeniyi CB, Lawal TO and Mahady GB. In vitro susceptibility of *Helicobacter pylori* to extracts of *Eucalyptus camaldulensis* and *Eucalyptus torelliana*. *Pharm Biol* 2009; 47(1):99-102.
- [453] Lawal TO, Adeniyi BA, Adegoke AO, Franzblau SG and Mahady GB. In vitro susceptibility of *Mycobacterium tuberculosis* to extracts of *Eucalyptus camaldulensis* and *Eucalyptus torelliana* and isolated compounds. *Pharm Biol* 2012; 50(1): 92-98.
- [454] El-Baz FK, Mahmoud K, El-Senousy WM, Darwesh OM and ElGohary AE. Antiviral – antimicrobial and schistosomicidal activities of *Eucalyptus camaldulensis* essential oils. *Int J Pharm Sci Rev Res* 2015; 31(1): 262-268.
- [455] Ghaffar A, Yameen M, Kiran S, Kamal S, Jalal F, Munir B, Saleem S, Rafiq N, Ahmad A, Saba I and Jabbar A. Chemical composition and *in vitro* evaluation of the antimicrobial and antioxidant activities of essential oils extracted from seven *Eucalyptus* species. *Molecules* 2015; 20: 20487–20498.
- [456] Suliman KD and Al-Dulimi FI. The synergistic inhibitory effect *Ulmus rubra* and *Eucalyptus microtheca* against *Staphylococcus aureus* and *Salmonella typhimurium* isolated from food poisoning. *Journal of Education and Science* 2008; 21(3): 28-52.
- [457] Al- Jeboury GH. *In vitro* antibacterial activity of *Eucalyptus microtheca* and *Cinnamomum zeylanicum* crude extracts against *Pseudomonas aeruginosa* isolates. *Medical Journal of Babylon* 2013; 10(4):784-793.
- [458] Seyyednejad SM, Motamedi H, Najvani FD and Hassannejad Z. Antibacterial effect of *Eucalyptus microtheca*. *Int J Enteric Pathog* 2014; 2(2): 1-5.
- [459] Ghaffar A, Yameen M, Kiran S, Kamal S, Jalal F, Munir B, Saleem S, Rafiq N, Ahmad A, Saba I and Jabbar A. Chemical composition and *in vitro* evaluation of the antimicrobial and antioxidant activities of essential oils extracted from seven *Eucalyptus* species. *Molecules* 2015; 20: 20487–20498.
- [460] Qanbar FH and Al-Mizraqchi AS. The antimicrobial effect of aqueous & alcoholic extracts of *Eucalyptus* leaves on oral Mutans streptococci, Lactobacilli & *Candida albicans* (an *in vitro* study). *J Bagh Coll Dentistry* 2009; 21(4): 109-112.
- [461] Nagata H, Inagaki Y, Tanaka M, Ojima M, Kataoka K, Kuboniwa M, Nishida N, Shimizu K, Osawa K and Shizukuishi S. Effect of *Eucalyptus* extract chewing gum on periodontal health: a double-masked, randomized trial. *J Periodontol* 2008; 79(8): 1378-1385.
- [462] Senatore F, De Fusco R and Napplitano F. *Eupatorium cannabinum* L. ssp. *sannabinum* (Asteraceae) essential oils. Chemical composition and antibacterial activity. *J Essent Oil Res* 2001; 13: 463-466.
- [463] Purcaru T, Alecu A, Diguta C and Matei F. *In vitro* evaluation of *Eupatorium cannabinum* antimicrobial activity. *Agro Life Scientific Journal* 2015; 4(2): 92-97.
- [464] Al-Snafi AE. Chemical constituents, pharmacological and therapeutic effects of *Eupatorium cannabinum*- A review. *Indo Am J P Sci* 2017; 4(01): 160-168.
- [465] Enerva LT, Atienza TV, Glifonea ZR, Villamor OB and Villa NA. Cytotoxicity and antimicrobial property of the leaf extract of *Euphorbia hirta* (Tawa-Tawa). *Open Journal of Social Sciences* 2015; 3: 162-170.
- [466] Al-Snafi AE. Pharmacology and therapeutic potential of *Euphorbia hirta* (Syn: *Euphorbia pilulifera*) - A review. *IOSR Journal of Pharmacy* 2017; 7(3): 7-20.
- [467] Pandey A and Verma N. Evaluation of antimicrobial activity of *Euphorbia hirta* and *Calotropis procera* against MDR pathogens. *IJPAES* 2013;3(3): 17-24.
- [468] Rao B, Loganatan K, Elumalai EK and Kumar G. Antibacterial and antifungal activity of *Euphorbia hirta* l. Leaves: A comparative study. *Journal of Pharmacy Research* 2010;. 3(3): 548.
- [469] El-Mahmood MA. Antibacterial activity of crude extracts of *Euphorbia hirta* against some bacteria associated with enteric infections. *Journal of Medicinal Plants Research* 2009; 3(7): 498-505.
- [470] Jenifer S, Laveena DK, Priya S, Singh SJS and Jeyesree J. Antimicrobial screening of *Euphorbia hirta* L. and *Pedaliium murex* L. A comparative study. *World Journal of Pharmacy and Pharmaceutical Sciences* 2014; 3(12): 1221-1226.
- [471] Rajeh MA, Zuraini Z, Sasidharan S, Latha LY and Amutha S. Assessment of *Euphorbia hirta* L. leaf, flower, stem and root extracts for their antibacterial and antifungal activity and brine shrimp lethality. *Molecules* 2010; 15, 6008-6018.

- [472] Upadhyay A, Chattopadhyay P, Goyary D, Mazumder PM and Veer V. *Euphorbia hirta* accelerates fibroblast proliferation and Smad-mediated collagen production in rat excision wound. *Pharmacognosy Magazine* 2014; 10(39): 534-542.
- [473] Saravanan R, Dhachinamoorthi D, Senthilkumar K, Srilakshmi M and Sri TD. Antibacterial activity of *Euphorbia hirta* extracts. *IJRAP* 2012; 3(3): 439-441.
- [474] Rajasekar TV, Anbarasu S, Manikkam R, Joseph J and Kumar V. Inhibitory activity of *Euphorbia hirta* (Tawa-tawa) extracts against *Mycobacterium tuberculosis* and other non mycobacterial pathogens. *Der Pharma Chemica* 2015; 7(8):213-216.
- [475] Lacuna MLDG, Carmona ML, Amparado BB, Daclan MAF and Ranido LA. Antimicrobial activity of supercritical fluid extracts of two Philippine medicinal plants, *Psidium guajava* and *Euphorbia hirta*: Implications to community health. *Advances in Agriculture & Botany - International Journal of the Bioflux Society* 2013; 5(1): 1-12.
- [476] Varun K. Screening of *Euphorbia hirta* for antibacterial activity against plant pathogens. MSc thesis, Faculty of T-Anna University, Chennai 2014.
- [477] Khurshid R, Saleem M, Karim S and Mir M. Antipyretic, antiviral and antithrombotic properties of *Euphorbia hirta* against Dengue fever. *Pharmacia* 2013;60(3): 8.
- [478] Kirbag S, Erecevit P, Zengin F and Guvenc AN. Antimicrobial Activities of Some *Euphorbia* Species. *Afr J Tradit Complement Altern Med* 2013; 10(5): 305–309.
- [479] Darwish RM and Aburjai TA. Effect of ethnomedicinal plants used in folklore medicine in Jordan as antibiotic resistant inhibitors on *Escherichia coli*. *BMC Complementary and Alternative Medicine* 2010; 10: 9 doi:10.1186/1472-6882-10-9
- [480] Čabarkapa IS, Sedej IJ, Sakač MB, Šarić LC and Plavšić DV. Antimicrobial activity of buckwheat (*Fagopyrum esculentum* Moench) hulls extract. *Food Processing, Quality and Safety* 2008; 4: 159-163.
- [481] Al-Snafi AE. A review on *Fagopyrum esculentum*: A potential medicinal plant. *IOSR Journal of Pharmacy* 2017; 7(3): 21-32.
- [482] Jeong MR, Kim HY and Cha JD. Antimicrobial activity of methanol extract from *Ficus carica* leaves against oral bacteria. *Journal of Bacteriology and Virology* 2009; 39(2): 97-102.
- [483] Weli AM, Al-Blushi AAM and Hossain MA. Evaluation of antioxidant and antimicrobial potential of different leaves crude extracts of Omani *Ficus carica* against food borne pathogenic bacteria. *Asian Pac J Trop Dis* 2015; 5(1): 13-16.
- [484] Rashid KI and Mahdi NM. Antimicrobial activity of fig (*Ficus carica* Linn.) leaf extract as compared with latex extract against selected bacteria and fungi. *Journal of Babylon University/Pure and Applied Sciences* 2014; 5(22): 1620-1626.
- [485] Aref HL, Salah KB, Chaumont JP, Fekih A, Aouni M and Said K. *In vitro* antimicrobial activity of four *Ficus carica* latex fractions against resistant human pathogens (antimicrobial activity of *Ficus carica* latex). *Pak J Pharm Sci* 2010; 23(1): 53-58.
- [486] Al-Snafi AE. Nutritional and pharmacological importance of *Ficus carica* - A review. *IOSR Journal of Pharmacy* 2017; 7(3): 33-48.
- [487] Ahmad J, Khan I, Khan S and Iqbal D. Evaluation of Antioxidant and antimicrobial activity of *Ficus carica* leaves: an *In vitro* approach. *J Plant Pathol Microb* 2013; 4:157.
- [488] Young-Soo L and Jeong-Dan C. Synergistic antibacterial activity of fig (*Ficus carica*) leaves extract against clinical isolates of methicillin-resistant *Staphylococcus aureus*. *Kor J Microbiol Biotechnol* 2010; 38(4): 405–413.
- [489] Jasmine R, Manikandan K, Niveditha B, Thirupathi K and Manikandan G. Evaluation the efficiency of *Ficus carica* fruits against a few drug resistant bacterial pathogens. *World Journal of Pharmacy and Pharmaceutical Sciences* 2014; 3(2): 1394-1400.
- [490] Lazreg-Aref H, Mars M, Fekih A, Aouni M and Said K. Chemical composition and antibacterial activity of a hexane extract of Tunisian caprifig latex from the unripe fruit of *Ficus carica*. *Pharm Biol* 2012; 50(4): 407-412.
- [491] Oliveira AP, Silva LR, de Pinho PG, Valentão P, Silva BM, Pereira JA and Andrade PB. Volatile profiling of *Ficus carica* varieties by HS-SPME and GC-IT-MS. *Food Chemistry* 2010; 123: 548–557.

- [492] Sun S, Li H, Zhou W, Liu A and Zhu H. Bacterial quorum sensing inhibition activity of the traditional Chinese herbs, *Ficus carica* L. and *Perilla frutescens*. *Chemotherapy* 2014;60:379-383.
- [493] Rahman M, Khatun A, Khan S, Hossain F and AKhan A. Phytochemical, cytotoxic and antibacterial activity of two medicinal plants of Bangladesh. *Pharmacology Online* 2014; 4: 3-10.
- [494] Blesson J, Sebastian J, Chinju AR, Saji CV, Pillai DV, Manohar G and Jose G. South Indian plants *Lawsonia inermis* L., *Ocimum sanctum* L., *Ficus religiosa* L. and *Callistemon citrinus* L. exhibit antibiotic resistance modifying effect on native strain of *Staphylococcus aureus*. *Int. Journal of Applied Sciences and Engineering Research* 2014; 3(4): 869-878.
- [495] Uma B, Prabhakar K and Rajendran S. *In vitro* antimicrobial activity and phytochemical analysis of *Ficus religiosa* L. and *Ficus bengalensis* L. against diarrhoeal enterotoxigenic *E. coli*. *Ethnobotanical Leaflets* 2009; 13: 472-474.
- [496] Pawar PL and Nabar BM. Effect of plant extracts formulated in different ointments. *Indian Journal of Pharmaceutical Sciences* 2010: 397-401.
- [497] Kaur R, Goyal AK, Kaushik D and Sharma RK. In vitro studies on antibiotic activity of *Ficus religiosa* fruits extract against human pathogenic bacteria. *Journal of Chemical and Pharmaceutical Research* 2014; 6(11): 80-84.
- [498] Sharma H, Yunus GY, Mohapatra AK, Kulshrestha R, Agrawal R and Kalra M. Antimicrobial efficacy of three medicinal plants *Glycyrrhiza glabra*, *Ficus religiosa*, and *Plantago major* on inhibiting primary plaque colonizers and periodontal pathogens: An in vitro study. *Indian J Dent Res* 2016; 27(2): 200-204.
- [499] Ramakrishnaiah G and Hariprasad T. In vitro antimicrobial activity of leaves and bark extracts of *Ficus religiosa* (Linn.). *Indian Journal of Pharmaceutical and Biological Research* 2013; 1(1): 37-42.
- [500] Rajiv P and Sivaraj R. Screening for phytochemicals and antimicrobial activity of aqueous extract of *Ficus religiosa* Linn. *International Journal of Pharmacy and Pharmaceutical Sciences* 2012; 4(5):207-209.
- [501] Al-Snafi AE. Pharmacology of *Ficus religiosa*- A review. *IOSR Journal of Pharmacy* 2017; 7(3): 49-60.
- [502] Manimozhi DM, Sankaranarayanan S and Sampath Kumar G. Effect of different extracts of stem bark of *Ficus* sp. on multidrug resistant pathogenic bacteria. *IJPSR* 2012; 3(7): 2122-2129.
- [503] Preethi R, Devanathan VV and Loganathan M. Antimicrobial and antioxidant efficacy of some medicinal plants against food borne pathogens. *Advances in Biological Research* 2010; 4:122-125.
- [504] Salami M, Rahimmalek M and Ehtemam MH. Inhibitory effect of different fennel (*Foeniculum vulgare*) samples and their phenolic compounds on formation of advanced glycation products and comparison of antimicrobial and antioxidant activities. *Food Chem* 2016;213:196-205.
- [505] Araujo RO, Souza IA, Sena KXFR, Brondani DJ and Solidonio EG. Biological evaluation of *Foeniculum vulgare* (Mill.) (Umbelliferae/Apiaceae). *Rev Bras Pl Med Campinas* 2013; 15(2): 257-263.
- [506] Kaur GJ and Arora DS. Antibacterial and phytochemical screening of *Anethum graveolens*, *Foeniculum vulgare* and *Trachyspermum ammi*. *Complementary and Alternative Medicine* 2009, 9:30 <http://www.biomedcentral.com/1472-6882/9/30>
- [507] Roby MHH, Sarhan MA, Selim KA, and Khalel KI. Antioxidant and antimicrobial activities of essential oil and extracts of fennel (*Foeniculum vulgare* L.) and chamomile (*Matricaria chamomilla* L.). *Industrial Crops and Products* 2013; 44:437-445.
- [508] Abbas TF. Detection the biological activity of aqueous extract of Shamar plant seeds *Foeniculum vulgare* Mill. *Muthanna Med J* 2016; 3(1): 49-55.
- [509] Cantore PL, Iacobellis NS, Marco AD, Capasso F and Senatore F. Antibacterial activity of *Coriandrum sativum* L. and *Foeniculum vulgare* Miller Var. *vulgare* (Miller) essential oils. *J Agric Food Chem* 2004; 52 (26): 7862–7866.
- [510] Upadhyay RK. GC-MS analysis and in vitro antimicrobial susceptibility of *Foeniculum vulgare* seed essential oil. *American Journal of Plant Sciences* 2015; 6: 1058-1068.
- [511] Tanira, MOM et al. Pharmacological and toxicological investigations on *Foeniculum vulgare* dried fruit extract in experimental animals. *Phytother Res* 1996; 10: 33-36.
- [512] Dahak K and Taourirte M. Comparative study of in vitro antimicrobial activities of *Foeniculum vulgare* Mill. (umbelliferae) extract. *OnLine Journal of Biological Sciences* 2013; 13(4): 115-120.

- [513] Al-Snafi AE. The chemical constituents and pharmacological effects of *Foeniculum vulgare* - A review. IOSR Journal of Pharmacy 2018; 8(5): 81-96.
- [514] Kostova IN, Nikolov NM and Chipilska LN. Antimicrobial properties of some hydroxycoumarins and *Fraxinus ornus* bark extracts. J Ethnopharmacol 1993; 39(3):205-208.
- [515] Lambrev J, Yankov N, Bachvarova T, Adjarova E. Nauchni Trudove na Vissh Selskostopanski Institute 'V Kolarov, Plovdiv 1961; 9: 311-317.
- [516] El-Hawary SS, Mohammed R, AbouZid SF, Hassan HM and Taher MA. Chemical composition and anti-microbial activity of the lipoid extract from the *Fraxinus ornus* (L.)seeds, family Oleacea. World Journal of Pharmacy and Pharmaceutical Sciences 2016; 5(5): 155-162.
- [517] Al-Snafi AE. Chemical constituents and pharmacological effects of *Fraxinus ornus*- A review. Indo Am J P Sc 2018; 5(3): 1721-1727.
- [518] Iossifova T, Kujungiev A, Ignatova A, Vassileva E and Kostova I. Antimicrobial effects of some hydro-xycoumarins and secoiridoids from *Fraxinus ornus* bark. Pharmazie 1994; 49: 298-299.
- [519] Iossifova T, Vogler B, Klaiber I, Kostova I and Kraus W. 46th Ann Congress Soc Med Plant Res, Vienna 1998, abs. G34.
- [520] Preininger V. The pharmacology and toxicology of the papaveraceae alkaloids . In: RHF Manske, ed. The Alkaloids XV. London: Academic Press, 1975:207-261.
- [521] Sengul M, Yildiz H, Gungor N, Cetin B, Eser Z and Ercisli S. Total phenolic content, antioxidant and antimicrobial activities of some medicinal plants. Pak J Pharm Sci 2009;22(1):102-106.
- [522] Hilal SH, Aboutabl EA, Youssef SAH, Shalaby MA and Sokkar NM. Lipoidal matter, flavonoid content, uterine stimulant and gonadal hormone-like activities of *Fumaria parviflora* Lam growing in Egypt. Plantes Medicinales et Phytotherapie. 1993; 26:383–396.
- [523] Al-Snafi AE. *Fumaria parviflora*- A review. Indo Am J P Sc 2018; 5(3): 1728-1738.
- [524] Vlase L, Mocan A, Hanganu D, Benedec D and Gheldiu A. Comparative study of polyphenolic content, antioxidant and antimicrobial activity from *Galium* Species (Rubiaceae). Digest Journal of Nanomaterials and Biostructures 2014; 9(3): 1085 - 1094.
- [525] Al-Snafi AE. Chemical constituents and medical importance of *Galium aparine* - A review. Indo Am J P Sc 2018; 5(3): 1739-1744.
- [526] Goryacha OV, Ilyina TV, Kovalyova AM and Kashpur NV. Phytochemical research of *Galium aparine* L. lipophilic complex and study of its antibacterial activity. The Pharma Innovation Journal 2014; 3(1): 7-10.
- [527] Vasilevna IT, Volodymyrivna GO, Leonidivna TE, Aleksandrovna KI and Mihaylovna KA. Antimicrobial Activity of the Genus *Galium* L. Pharmacogn Commn 2016; 6(1) 42-47.
- [528] Ilyina TV, Goryachaya OV, Toryanik EL, Kulish IA and Kovaleva AM. Antimicrobial activity of the genus *Galium* L. Pharmacognosy Communications 2016; 6(1):42-47.
- [529] Al-Snafi AE. *Galium verum* -A review. Indo Am J P Sc 2018; 5 (4): 2142-2149.
- [530] Chiriac IP and Ulea E. Antibacterial activity of some plant extracts and different pesticides against an *Erwinia amylovora* (Burrill.) winslow Et Al. Strain isolated from a nursery stock. Research Journal of Agricultural Science 2012; 44 (2), 19-23.
- [531] Al-Snafi AE. Constituents and pharmacology of *Geum urbanum*- A review. IOSR Journal of pharmacy 2019; 9(5): 28-33.
- [532] Majd A, Mehrabian S, Khanafari A. Evaluating antimicrobial effect of *Glaucium* on oral microflora. Journal of Dental Medicine 1996; 9 (2) :57-66.
- [533] El-Sayed MH, Refaat BM and Sharaf MH. Microbiological evaluation of antibacterial potentiality of some edible plant extracts against multidrug resistant (MDR) human pathogens. International Current Pharmaceutical Journal 2014; 4(1): 336-339.
- [534] Al-Snafi AE. Medical importance of *Glossostemon bruguieri* – A review. IOSR Journal of pharmacy 2019; 9(5): 34-39.

- [535] Rodino S, Butu A, Butu M and Cornea PC. Comparative studies on antibacterial activity of licorice , elderberry and dandelion. *Digest Journal of Nanomaterials and Biostructures* 2015; 10(3): 947 – 955.
- [536] Sultana S, Haque A, Hamid K, Urmi KF and Roy S. Antimicrobial, cytotoxic and antioxidant activity of methanolic extract of *Glycyrrhiza glabra*. *Agric Biol J N Am* 2010; 1(5): 957-960.
- [537] Abbas A, Zubair M, Rasool N and Rizwan K. Antimicrobial potential of *Glycyrrhiza glabra*. *Journal of Drug Design and Medicinal Chemistry* 2015; 1(2): 17-20.
- [538] Kriker S and Yahia A. Effect of flavonoid extract of the medicinal plant (*Glycyrrhiza glabra* L.) in the region of Djamaa (south of Algeria) on the growth of some human pathogenic bacteria. *Journal of Pharmacognosy and Phytochemistry* 2013; 2 (4): 58-62.
- [539] Badr SEA, Sakr DM, Mahfouz SA and Abdelfattah MS. Licorice (*Glycyrrhiza glabra* L.): Chemical Composition and Biological Impacts. *Research Journal of Pharmaceutical, Biological and Chemical Sciences* 2013; 4(3): 606-621.
- [540] Nirmala P and Selvaraj T. Anti-inflammatory and anti-bacterial activities of *Glycyrrhiza glabra* L. *Journal of Agricultural Technology* 2011; . 7(3): 815-823.
- [541] Gupta A, Maheshwari DK and Khandelwal G. Antibacterial activity of *Glycyrrhiza glabra* roots against certain gram-positive and gram-negative bacterial strains. *Journal of Applied and Natural Science* 2013; 5 (2): 459-464.
- [542] Sedighinia F, Afshar AS, soleimanpour S, zarif R, Asili J, and Ghazvini K. Antibacterial activity of *Glycyrrhiza glabra* against oral pathogens: an *in vitro* study. *Avicenna J Phytomed* 2012; 2(3): 118–124.
- [543] Mahto RP, Mukherjee R and Biswas S. *In vitro* antimicrobial activity of aqueous and methanolic root extracts of *Glycyrrhiza glabra* against pathogenic microorganisms isolated from bovine mastitis. *World Journal of Pharmacy and Pharmaceutical Sciences* 2014; 3(10): 662-670.
- [544] Nitalikar MM, Munde KC, Dhore BV and Shikalgar SN. Studies of antibacterial activities of *Glycyrrhiza glabra* root extract. *Int J PharmTech Res* 2010,2(1): 899-901.
- [545] Soulef K, Abdelouaha Y and Dalal B. Effect of glycosides extract of the medicinal plant *Glycyrrhiza glabra* L. from the region of Mlilli (southeast of Algeria) on the growth of some human pathogenic bacteria. *Journal of Scientific and Innovative Research* 2014; 3 (1): 28-34.
- [546] Chopra PKPG, Saraf BD, Inam F and Deo SS. Antimicrobial and antioxidant activities of methanol extract roots of *Glycyrrhiza glabra* and HPLC analysis. *Int J Pharm Pharmacol Sci* 2013;5:157-160.
- [547] Irani M, Sarmadi M, Bernard F, Ebrahimi pour GH and Bazarnov HS. Leaves Antimicrobial Activity of *Glycyrrhiza glabra* L. *Iranian Journal of Pharmaceutical Research* (2010), 9 (4): 425-428.
- [548] Gupta VK, Fatima A, FaridiU, Negi AS, Shanker K, Kumarb JK, Rahuja N, Luqmana S, Sisodia BS, Saikia D, Darokar MP and Khanuja SPS. Antimicrobial potential of *Glycyrrhiza glabra* roots. *Journal of Ethnopharmacology* 2008; 116: 377–380.
- [549] Karahan F, Avsar C, Ozyigit II and Berber I. Antimicrobial and antioxidant activities of medicinal plant *Glycyrrhiza glabra* var. *glandulifera* from different habitats, *Biotechnology & Biotechnological Equipment* 2016; 30:4: 797-804.
- [550] Krausse R, Bielenberg J, Blaschek W and Ullmann U. In vitro anti-*Helicobacter pylori* activity of *Extractum liquiritiae*, glycyrrhizin and its metabolites. *Journal of Antimicrobial Chemotherapy* 2004; 54: 243–246.
- [551] Al-Snafi AE. *Glycyrrhiza glabra*: A phytochemical and pharmacological review. *IOSR Journal of Pharmacy* 2018;8(6): 1-17.
- [552] Chaturvedi A, Singh S, Nag TN. Antimicrobial activity of flavonoids from *in vitro* tissue culture and seeds of *Gossypium* species. *Romanian Biotechnological Letters* 2010; 15(1): 4959-63.
- [553] Margalith P. Inhibitory effect of gossypol on microorganisms. *App Microbiology* 1967; 15(4): 952-953.
- [554] Yildirim-Aksoy M, Lim C, Dowd MK, Wan PJ, Klesius PH and Shoemaker C. In vitro inhibitory effect of gossypol from gossypol-acetic acid, and (+)- and (-)-isomers of gossypol on the growth of *Edwardsiella ictaluri*. *Journal of Applied Microbiology* 2004; 97: 87–92.
- [555] Omojasola PF and Awe S. The antibacterial activity of the leaf extracts of *Anacardium occidentale* and *Gossypium hirsutum* against some selected microorganisms. *Biosci Res Commun* 2004; 16(1): 25–28.

- [556] Tabassum N and Vidyasagar GM. In vitro antimicrobial activity of edible oils against human pathogens causing skin infections. IJPSR 2014; 5(10): 4493-4498.
- [557] Chan BG and Lukefahr. Condensed tannin, an antibiotic chemical from *Gossypium hirsutum*. Journal of Insect Physiology 1978; 24(2): 113-118.
- [558] Al-Snafi AE. Chemical constituents and pharmacological activities of *Gossypium herbaceum* and *Gossypium hirsutum* - A review. IOSR Journal of Pharmacy 2018; 8(5): 64-80.
- [559] Sabry OM, El Sayed AM and A Sleem A. Potential anti-microbial, anti-inflammatory and anti-oxidant activities of *Haplophyllum tuberculatum* growing in Libya. J Pharmacogn Nat Prod 2016, 2:1, <http://dx.doi.org/10.4172/2472-0992.1000116>
- [560] Al-Burtamani SK, Fatope MO, Marwah RG, Onifade AK and Al-Saidi SH. Chemical composition, antibacterial and antifungal activities of the essential oil of *Haplophyllum tuberculatum* from Oman. J Ethnopharmacol 2005;96(1-2):107-112.
- [561] Acheuk F, Djouahra-Fahem J, Ait Kaci K and Fazouane F. Antibacterial effect of alkaloids and polyphenols of algerian medicinal plant: *Haplophyllum tuberculatum* (FORSSK.) A. JUSS. 11th International Symposium on the Chemistry of Natural Compounds (SCNC 2015) . Antalya- Turkey 1-4 Oct 2015.
- [562] Al-Snafi AE. Pharmacological importance of *Haplophyllum* species grown in Iraq- A review. IOSR Journal of Pharmacy 2018;8(5): 54-62.
- [563] Cioaca C, Margineanu C and Cucu V. The saponins of *Hedera helix* with antibacterial activity. Pharmazie 1978; 33(9):609-610.
- [564] Uddin G, Rauf A, Qaisar M, Ur Rehman T, Latif A and Ali M. Preliminary phytochemical screening and antimicrobial activity of *Hedera helix* L. Middle-East Journal of Scientific Research 2011; 8 (1): 198-202.
- [565] Saiah H, Allem R, El Kebir FZ. Antioxidant and antibacterial activities of six Algerian medicinal plants. Int J Pharm Pharm Sci 2016; 8(1): 367-374.
- [566] Al-Snafi AE. Pharmacological and therapeutic activities of *Hedera helix*- A review IOSR Journal of Pharmacy 2018; 8(5): 41-53.
- [567] Aboki MA, Mohammed M, Musa SH and Zuru BS. Physicochemical and anti-microbial properties of sunflower (*Helianthus annuus* L.) seed oil. International Journal of Science and Technology 2012; 2(4): 151-154.
- [568] Adetunji CO, Olatunji OM, Ogunkunle ATJ, Adetunji JB and Ogundare M O. Antimicrobial activity of ethanolic extract of *Helianthus annuus* stem. SMU Medical Journal 2014; 1(1):79-88.
- [569] Ibrahim TA, Ajongbolo KF and Aladekoyi G. Phytochemical screening and Antimicrobial activity of crude extracts of *Basella alba* and *Helianthus annuus* on selected food pathogens. RRJMB 2014; 3(2): 27-31.
- [570] Subashini R and Rakshitha SU. Phytochemical screening, antimicrobial activity and in vitro antioxidant investigation of methanolic extract of seeds from *Helianthus annuus* L. Chemical Science Review and Letters 2012; 1(1) : 30-34.
- [571] Darmstadt GL, Badrawi N, Law PA, Ahmed S, Bashir M, Iskander I, Al Said D, El Kholy A, Husein MH, Alam A, Winch PJ, Gipson R and Santosham M. Topically applied sunflower seed oil prevents invasive bacterial infections in preterm infants in Egypt: a randomized, controlled clinical trial. Pediatr Infect Dis J 2004; 23(8):719-725.
- [572] Aziz FM, Darweesh MJ, Rahi FA AND Saeed RT. *In vivo* and *in vitro* studies of a polar extract of *Helianthus annuus* (Sunflower) seeds in treatment of Napkin dermatitis. Int J Pharm Sci Rev Res 2014; 24(2): 1-3.
- [573] Moran AC, Choudhury N, Khan NUZ, Karar ZA, Wahed T, Rashid SF and Alam AM. Newborn care practices among slum dwellers in Dhaka, Bangladesh: a quantitative and qualitative exploratory study. BMC Pregnancy and Childbirth 2009; 9(1):54, doi:10.1186/1471-2393-9-54.
- [574] Al-Snafi AE. The pharmacological effects of *Helianthus annuus*- A review. Indo Am J P Sc 2018; 5(3):1745-1756.
- [575] Afifi FU and Abu-Dahab R. Phytochemical screening and biological activities of *Eminium spiculatum* (Blume) Kuntze (family Araceae). Nat Prod Res 2012; 26(9): 878-882.
- [576] Obeidat M. Antimicrobial activity of some medicinal plants against multidrug resistant skin pathogens. Journal of Medicinal Plants Research 2011; 5(16): 3856-3860.

- [577] Obeidat M, Shatnawi M, Al-alawi M, Al-Zubi E et al. Antimicrobial activity of crude extracts of some plant leaves. Res J of Microbiol 2012; doi: 10.3923/jm.2012.
- [578] Seleman VT, Jarjes VY, Mahmood ZE, Ahmed SS and Qader MK. Study effects of plant extracts on the growth of clinical species of bacteria and fungi. American Journal of Food Science and Health 2016; 2(6): 156-160.
- [579] Saeedi M and Morteza-Semnani K. Chemical composition and antimicrobial activity of essential oil of *Heliotropium europaeum*. Chemistry of Natural Compounds 2009; 45(1): 98-99.
- [580] Ahmad S, AbdEl-Salam NM and Ullah R. *In Vitro* Antimicrobial bioassays, DPPH radical scavenging activity, and FTIR spectroscopy analysis of *Heliotropium bacciferum*. Biomed Res Int 2016; 2016: 3818945. doi: 10.1155/2016/3818945
- [581] Al-Snafi AE. Pharmacological and toxicological effects of *Heliotropium undulatum* (*H. bacciferum*) and *Heliotropium europaeum*- A review. Indo Am J P Sc 2018; 5 (4): 2150-2158.
- [582] Ahmad S, Ahmad S, Bibi I, AbdEl-Salam NM, Hussain H, Ishaq MS, Adnan M, Tariq A and Ullah R. Antibacterial and antifungal activities of the extract and fractions of aerial parts of *Heliotropium bacciferum*. *African Journal of Traditional, Complementary and Alternative Medicines* 2015; 12(2):32–35.
- [583] Rahimifard N, Bagheri E, Asgarpanah G, Balajadeh BK and Yazdi HR. Antibacterial activity of total extract, petroleum ether, chloroform, ethyl acetate and aqueous fractions of aerial parts of *Heliotropium bacciferum*. JMP 2014; 4(52): 122-135.
- [584] Rahimifard N, Bagheri E, Asgarpanah J, Balajadeh BK, Yazdi H and Bagheri F. Study of the antibacterial activity of total extract and petroleum ether, chloroform, ethyl acetate and aqueous fractions of aerial parts of *Heliotropium bacciferum* against *Staphylococcus aureus*, *Bacillus cereus*, *Pseudomonas aeruginosa*, *E. coli*, *Salmonella enteritidis*. Biosciences Biotechnology Res Asia 2014; 11(1): 239-248.
- [585] Skariyachan S, Jayaprakash N, Bharadwaj N and Narayanappa R. Exploring insights for virulent gene inhibition of multidrug resistant *Salmonella typhi*, *Vibrio cholerae*, and *Staphylococcus aureus* by potential phytoligands via in silico screening. J Biomol Struct Dyn 2014; 32(9):1379-1395.
- [586] Wojnicz D, Kucharska AZ, Sokól-Letowska A, Kicia M, Tichaczek-Goska A. Medicinal plants extracts affect virulence factors expression and biofilm formation by the uropathogenic *Escherichia coli*. Urol Res 2012; 40(6):683–697.
- [587] Al-Snafi AE. Pharmacological importance of *Herniaria glabra* and *Herniaria hirsuta* - A review. Indo Am J P Sc 2018; 5 (4): 2167-2175.
- [588] Cai T, Gallelli L, Meacci F, Brugnolli A, Prospero L, Roberta S, Eccher C, Mazzoli S, Lanzafame P, Caciagli P, Malossini G and Bartoletti R. The efficacy of umbelliferone, arbutin, and N-acetylcysteine to prevent microbial colonization and biofilm development on urinary catheter surface: results from a preliminary study. Journal of Pathogens 2016; 4(5):1-6.
- [589] Rovcanin BR, Cebovic T, Stesevvc D, Kekic D and Ristic M. Antibacterial effect of *Herniaria hirsuta*, *Prunus avium*, *Rubia tinctorum* and *Sempervivum tectorum* plant extract on multiple antibiotic resistance *Escherichia coli*. Biosci J Uberlândia 2015; 31(6): 1852-1861.
- [590] Nilugal KC, Fattepur S, Kazi HA, Bacayo MF, Asmani MF and Chittur AI. In vitro screening of *Hibiscus cannabinus* L. leaves extracts for antibacterial activity. World Journal of Pharmaceutical Research 2016; 5(6): 369-378.
- [591] Karthik S, Thirupathamma AL and Nagendhiran A. Evaluation of anti microbial activity and synthesis of silver nanoparticles from *Hibiscus cannabinus* and *Punica granatum*. Journal of NanoScience and NanoTechnology 2014; 2(4): 448-458.
- [592] Al-Snafi AE. Pharmacological effects and therapeutic properties of *Hibiscus cannabinus*- A review. Indo Am J P Sc 2018; 5 (4): 2176-2182.
- [593] Ruban P and Gajalakshmi K. *In vitro* antibacterial activity of *Hibiscus rosa-sinensis* flower extract against human pathogens. Asian Pac J Trop Biomed 2012; 2(5): 399–403.
- [594] Rathi SG, Patel KR, Bhaskar VH. Isolation of herbal plants: antifungal and antibacterial activities. JPSBR 2012; 2(1):25-29.
- [595] Arullappan S, Zakaria Z and Basri DF. Preliminary screening of antibacterial activity using crude extracts of *Hibiscus rosa sinensis*. Tropical Life Sciences Research 2009; 20(2), 109–118.

- [596] Sumathy R and Sankaranarayanan S. Evaluation of antioxidant and antimicrobial activity of flavanoid rich fraction of two Indian medicinal plants. *International Journal of Ethnomedicine and Pharmacological Research* 2013;1(1): 7-14.
- [597] Uddin SB, Sultana r and Faruque O. Antibacterial activity of some selected medicinal plants used by the Rakhaing community of Cox's Bazar district of Bangladesh. *Academia Journal of Microbiology Research* 2014; 2(1): 21-27.
- [598] Uddin B, Hossan T, Paul S, Ahmed T, Nahar T and Ahmed S. Antibacterial activity of the ethanol extracts of *Hibiscus rosa-sinensis* leaves and flowers against clinical isolates of bacteria. *Bangladesh Journal of Life Sciences* 2010; 22(2): 65-73.
- [599] Khan ZA, Naqvi SA, Mukhtar A, Hussain Z, Shahzad SA, Mansha A, Ahmad M, Zahoor AF, Bukhari IH, Ashraf-Janjua MR, Mahmood N and Yar M. Antioxidant and antibacterial activities of *Hibiscus Rosa-sinensis* Linn flower extracts. *Pak J Pharm Sci* 2014;27(3):469-474.
- [600] Agarwal S and Prakash R. Evaluation of antibacterial activity of *Hibiscus rosa-sinensis* flower extract against *E. coli* and *B. subtilis*. *Biological Forum – An International Journal* 2014; 6(2): 194-196.
- [601] Victoria J and Arunmozhl V. Antibacterial activity of *Hibiscus rosa-sinensis* and *Rosa damascene* petals against dental pathogen. *Int J Int sci Inn Tech Sec B* 2014; 3(3):1-6.
- [602] Kumari OS, Rao NB and Reddy VK. Phyto-chemical analysis and anti-microbial activity of *Hibiscus rosa sinensis*. *World Journal of Pharmacy and Pharmaceutical Sciences* 2015; 4(5): 766-771.
- [603] Tiwari U, Yadav P, Nigam D. Study on Phytochemical screening and antibacterial potential of methanolic flower and leaf extracts of *Hibiscus rosa-sinensis*. *International Journal of Innovative and Applied Research* 2015; 3(6): 9- 14
- [604] Mak YW, Chuah LO, Ahmad R and Bhat R. Antioxidant and antibacterial activities of hibiscus (*Hibiscus rosa-sinensis* L.) and Cassia (*Senna bicapsularis* L.) flower extracts. *Journal of King Saud University – Science* (2013) 25, 275–282.
- [605] Al-Snafi AE. Chemical constituents, pharmacological effects and therapeutic importance of *Hibiscus rosa-sinensis*- A review. *Journal of Pharmacy* 2018; 8 (7): 101-119.
- [606] Sultan FI, Khorsheed AC and Mahmood AK. Chromatographic separation and identification of many fatty acids from flowers of *Hibiscus sabdariffa* L. and its inhibitory effect on some pathogenic bacteria. *IJRRAS* 2014; 19 (2): 140-149.
- [607] Jung E, Kim Y and Joo N. Physicochemical properties and antimicrobial activity of Roselle (*Hibiscus sabdariffa* L.). *J Sci Food Agric* 2013;93(15):3769-3776.
- [608] El Kamali HH and Mohammad MF. Antibacterial activity of *Hibiscus sabdariffa suaveolens* var. *suaveolens* against upper respiratory tract pathogens. *Sudan JMS* 2006; 1(2): 121-127.
- [609] Abd-Ulgadir KS, Suliman SI, Zakria IA and Hassan NA. Antimicrobial potential of methanolic extracts of *Hibiscus sabdariffa* and *Ricinus communis*. *Advancement in Medicinal Plant Research* 2015; 3(1): 18-22.
- [610] Abdallah EM. Antibacterial activity of *Hibiscus sabdariffa* L calyces against hospital isolates of multidrug resistant *Acinetobacter baumannii*. *Journal of Acute Disease* 2016; 5(6): 512–516.
- [611] Ewansiha JU. Evaluation of the antimicrobial activity of roselle (*Hibiscus sabdariffa* L.) leaf extracts and its phytochemical properties. *Peak Journal of Medicinal Plant Research* 2014; 2 (1) 1-5.
- [612] Fullerton M, Khatiwada J, Johnson JU, Davis S and Williams LL. Determination of antimicrobial activity of sorrel (*Hibiscus sabdariffa*) on *Escherichia coli* O157:H7 isolated from food, veterinary, and clinical samples. *J Med Food* 2011;14(9):950-956.
- [613] Higginbotham KL, Burris KP, Zivanovic S, Davidson PM and Stewart CN Jr. Antimicrobial activity of *Hibiscus sabdariffa* aqueous extracts against *Escherichia coli* O157:H7 and *Staphylococcus aureus* in a microbiological medium and milk of various fat concentrations. *J Food Prot* 2014;77(2):262-268.
- [614] Abdallah EM. Antibacterial efficiency of the Sudanese Roselle (*Hibiscus sabdariffa* L.), a famous beverage from Sudanese folk medicine. *J Intercult Ethnopharmacol* 2016; 5(2):186-190.
- [615] Hassan ST, Berchová K, Majerová M, Pokorná M and Švajdlenka E. In vitro synergistic effect of *Hibiscus sabdariffa* aqueous extract in combination with standard antibiotics against *Helicobacter pylori* clinical isolates. *Pharm Biol* 2016;54(9):1736-1740.

- [616] Al-Snafi AE. Pharmacological and therapeutic importance of Hibiscus sabdariffa- A review. International Journal of Pharmaceutical Research 2018; 10(3): 451-475.
- [617] Benhouda A, Yahia M, Benhouda D, Bousnane NE, Benbia S, Hannachi NE and Ghecham A. Antimicrobial and antioxidant activities of various extracts of *Hyoscyamus albus* L. and *Umbilicus rupestris* L. leaves. Algerian Journal of Natural Products 2014; 2(1): 4-17.
- [618] Alghazeer R, El-Saltani H, Saleh N, Al-Najjar A and Hebail F. Antioxidant and antimicrobial properties of five medicinal Libyan plants extracts. Natural Science 2012; 4: 324-335.
- [619] Kadi K, Yahia A, Hamli S, Auidane L, Khabthane H and Ali WK. In vitro antibacterial activity and phytochemical analysis of White henbane treated by phytohormones. Pak J Biol Sci 2013;16(19):984-990.
- [620] Dulger G and Dulger B. Antimicrobial activity of the seeds of *Hyoscyamus niger* L. (Henbane) on microorganisms isolated from urinary tract infections. Journal of Medicinal Plants Studies 2015; 3(5): 92-95
- [621] Akhtar MS and Gill SA. Evaluation of anticlostridial efficacy of indigenous medicinal plant drugs: Rasoot, Ajwain Khurasani Neem and Bakain. Pak J Agri Sci 1992; 29(4): 371-375.
- [622] Mateen A, TanveerZ, Janardhan K and Gupta VC. Screening and purification of antibacterial proteins and peptides from some of the medicinal plants seeds. Int J Pharm Bio Sci 2015; 6(4): (B) 774 – 781.
- [623] Güneş E, Zengin G, Uysal A, Aktümsek A and Durak Y. A study on antioxidant and antimicrobial properties of hexane and water extracts from *Hyoscyamus reticulatus*. SUFEFD 2014; 39: 21-29.
- [624] Al-Snafi AE. Therapeutic importance of *Hyoscyamus* species grown in Iraq (*Hyoscyamus albus*, *Hyoscyamus niger* and *Hyoscyamus reticulatus*)- A review. IOSR Journal of Pharmacy 2018; 8(6): 18-32.
- [625] Alshamma A and Mitscher LA. Screening results of 327 species for alkaloids and antimicrobial agents. J. Natural Product 1979; 42: 633-642.
- [626] Sakara MK and Tamer AU. Antimicrobial activity of different extracts from some *Hypericum* species. Fitoterapia 1990; 61: 464-466.
- [627] Mukherjee PK, Wahile A, Ahamed KFHN and Rajan S. *Hypericum* source of natural antimicrobials. Oriental Pharmacy and Experimental Medicine 2003; 3(3): 111-122.
- [628] Rouis Z, Abid N, Koudja S, Yangui T, Elaissi A, Cioni PL, Flamini G and Aouni M. Evaluation of the cytotoxic effect and antibacterial, antifungal, and antiviral activities of *Hypericum triquetrifolium* Turra essential oils from Tunisia. BMC Complementary and Alternative Medicine 2013, 13:24, <http://www.biomedcentral.com/1472-6882/13/24>
- [629] Pistelli L, Bertoli A, Morelli I, Menichini F, Musmanno RA, Di Maggio T and Coratza G. Chemical and antibacterial evaluation of *Hypericum triquetrifolium* Turra. Phytotherapy Res 2005;19: 787-791.
- [630] Kızıl G, Toker Z, Özen H and Aytekin C. The Antimicrobial Activity of Essential Oils of *Hypericum scabrum*, *Hypericum scabroides* and *Hypericum triquetrifolium*. Phytotherapy Research 2004; 18: 339–341.
- [631] Al-Snafi AE. Chemical constituents and pharmacological effects of *Hypericum triquetrifolium*. Indo Am J P Sc 2018; 5(3): 1757-1765.
- [632] Guinoiseau E, Luciani A, Rossi PG, Quilichini Y, Ternengo S, Bradesi P and Berti L. Cellular effects induced by *Inula graveolens* and *Santolina corsica* essential oils on *Staphylococcus aureus*. Eur J Clin Microbiol Infect Dis 2010;29(7):873-879.
- [633] Mitic V, Stankov Jovanovic V, Ilic M, Jovanovic O, Djordjevic A and Stojanovic G. *Dittrichia graveolens* (L.) Greuter Essential Oil: chemical composition, multivariate analysis, and antimicrobial activity. Chem Biodivers 2016;13(1):85-90.
- [634] Bello AA and Qashlan A. Antimicrobial activity of the plant extracts of *Inula graveolens* and *Inula viscosa*. Drasat-Basic sciences 2013; 1(39): 34-43.
- [635] Mahboubi M. Chemical composition, antimicrobial and antioxidant activities of *Dittrichia graveolens* (L.) Greuter essential oil. Herba Polonica 2011; 57(3): 20-31.
- [636] Mazandarani M, Ghafourian M and Khormali A. Ethnopharmacology, antibacterial and antioxidant activity of *Dittrichia graveolens* (L.) W. Greuter. which has been used as remedies antirheumatic, anti-inflammation and antiinfection against Leishmaniasis in the traditional medicine of Gorgan, Iran. Crescent Journal of Medical and Biological Sciences 2014; 1(4): 125-129.

- [637] Miladinović DL, Ilić BS, Kocić BD, Marković MS and Miladinović LC. *In vitro* trials of *Dittrichia graveolens* essential oil combined with antibiotics. *Nat Prod Commun* 2016;11(6):865-868.
- [638] Caldes G, Prescott B and King JR. Potential antileukemic substance present *Globularia alypum*. *Planta Med* 1975; 27:72–76.
- [639] Al-Snafi AE. Chemical constituents and pharmacological effect of *Inula graveolens* (Syn: *Dittrichia graveolens*)- A review. *Indo Am J P Sc* 2018; 5 (4): 2183-2190.
- [640] Al-Khazraji SM. Evaluation of antibacterial activity of *Jasminum officinale*. *IOSR Journal of Pharmacy and Biological Sciences* 2015; 10(1): 121-124.
- [641] Rama G and Ampati S. Evaluation of flowers of *Jasminum officinale* antibacterial activity. *JAPS* 2013; 3(1): 428-431.
- [642] Hussain M, Bakhsh H, Abdul Majeed A, Abdul Mujeeb KIA and Farooq U. Comparative *In vitro* study of antimicrobial activities of flower and whole plant of *Jasminum officinale* against some human pathogenic microbes. *Journal of Pharmacy and Alternative Medicine* 2013; 2(4): 33-44.
- [643] Shekhar S and Prasad MP. Evaluation of antimicrobial activity of *Jasminum officinale* using solvent extracts against clinical pathogens. *World Journal of Pharmacy and Pharmaceutical Sciences* 2015; 5(4): 1247-1256.
- [644] Kumar GS, Jayaveera KN, Kumar CKA, Sanjay UP, Swamy BMV and Kumar DVK. Antimicrobial effects of Indian medicinal plants against acne-inducing bacteria. *Tropical Journal of Pharmaceutical Research* 2007; 6 (2): 717-723.
- [645] Al-Snafi AE. Pharmacology and medicinal properties of *Jasminum officinale*- A review. *Indo Am J P Sc* 2018; 5 (4): 2191-2197.
- [646] Gowdhami T, Rajalakshmi AK, Sugumar N and Valliappan R. Evaluation of antimicrobial activity of different solvent extracts of aromatic plant: *Jasminum sambac* linn. *Int J Res Pharm Sci* 2015 5(4): 18 –23.
- [647] Gowdhami T, Rajalakshmi AK, Sugumar N and Valliappan R. Evaluation of antimicrobial activity of different solvent extracts of aromatic plant: *Jasminum sambac* linn. *Journal of Chemical and Pharmaceutical Research* 2015; 7(11):136-143.
- [648] Syam SK, Anudeep M, Ramana CV and Bhaskar C. Screening of antimicrobial activity of flower extracts on human bacterial pathogens. *Journal of Pharmacognosy and Phytochemistry* 2015; 3(6): 153-156.
- [649] Kumar S, Navneet and Gautam SS. Screening of antimicrobial properties of *Jasminum sambac* linn leaf extracts against dental pathogens. *Research Journal of Phytochemistry* 2015; 9 (4): 195-200.
- [650] Koly SF. *In Vitro* antibacterial activity of crude methanolic extracts from leaves of *Jasminum sambac*. *IAJPS* 2016; 3 (6): 560-565.
- [651] Joy P and Raja DP. Anti-bacterial activity studies of *Jasminum grandiflorum* and *Jasminum sambac*. *Ethnobotanical Leaflets* 2008; 12: 481-483.
- [652] Rafique R, Khan Z, Altaf S and Parveen A. Evaluation of in-vitro antibacterial activity of leaf extracts of three species of family Oleaceae. *Journal of Biodiversity and Environmental Sciences* 2016: 150-158.
- [653] Tomar K and Rihwani S. Evaluation of antibacterial activity of Phytoconstituents isolated from *Jasminum sambac* L. and their identification through GC-MS. *International Journal of Engineering Technology, Management and Applied Sciences* 215 3(Special Issue): 451-459.
- [654] Abdoul-Latif F, Edou P, Eba F, Mohamed N, Ali A, Djama S, Obame LC, Bassolé I and Dicko M. Antimicrobial and antioxidant activities of essential oil and methanol extract of *Jasminum sambac* from Djibouti. *African Journal of Plant Science* 2010; 4 (3): 38-43.
- [655] Rath CC, Devi S, Dash SK and Mishra RK. Antibacterial potential assessment of Jasmine essential oil against *E. coli*. *Indian J Pharm Sci* 2008;70(2):238-241.
- [656] Al-Snafi AE. Pharmacological and therapeutic effects of *Jasminum sambac*- A review. *Indo Am J P Sc* 2018; 5(3): 1766-1778.
- [657] Qa'dan F, Thewaini A, Ali DA, Afifi R, Elkhawad A and Matalka KZ. The antimicrobial activities of *Psidium guajava* and *Juglans regia* leaf extracts to acne-developing organisms. *The American Journal of Chinese Medicine* 2005; 33(2): 197–204.

- [658] Santos-Filho SD, Diniz CL, do Carmo FS, da Fonseca AS and Bernardo-Filho M. Influence of an extract of *Juglans regia* on the growth of *Escherichia coli*, on the electrophoretic profile of plasmid DNA and on the radiolabeling of blood constituents. *Braz Arch Biol. Technol* 2008; 51(special): 163-168.
- [659] Moori Bakhtiari N and Khalafi E. Antibacterial activity of the hydro-alcoholic extract of *Juglans regia* L. stem bark on human bacterial infection. *Int Arch Health Sci Fall* 2015; 2(4): 139-143.
- [660] Abdullah FE, Zulfiqar M, Lakhani M and Abu Talib. Antibacterial effect of *Camellia*, *Juglans*, and *Hippophae* spp. on methicillin-resistant strains of *S. epidermidis* and *S. hemolyticus* in urine samples. *Journal of the Dow University of Health Sciences Karachi* 2012, Vol. 6 (2): 53-55.
- [661] Shah TI, Ganesh N and Akthar S. Preliminary phytochemical evaluation and antibacterial potential of different leaf extracts of *Juglana Regia*: A ubiquitous dry fruit from Kashmir-India. *Int J Pharm Sci Rev Res* 2013; 19(2): 93-96.
- [662] Bakhtiari NM, Jamshidian J and Khalafi E. Effect of *Juglans regia* L. stem bark hydroalcoholic extract on methicillin resistant *Staphylococcus aureus*. *Jundishapur J Nat Pharm Prod* 2016;11(1): e29095. doi: 10.17795/jjnpp.29095
- [663] Sharafati-Chaleshtori R, Sharafati-Chaleshtori F and Rafieian M. Biological characterization of Iranian walnut (*Juglans regia*) leaves. *Turk J Biol* 2011; 35: 635-639.
- [664] Mohammed NA, Hossien YK and Jassim KA. Comparison of antimicrobial activities of methanol extracts of *Juglans regia* against *Staphylococcus aureus*, & *Streptococcus mutans* with ciprofloxacin: *Invitro*. *Al- Mustansiriyah J Sci* 2012; 23(6): 1-6.
- [665] Kong YH, Zhang L, Yang ZY, Han C, Hu LH, Jiang HL and Shen X. Natural product juglone targets three key enzymes from *Helicobacter pylori*: inhibition assay with crystal structure characterization. *Acta Pharmacologica Sinica* 2008; 29: 870-876.
- [666] Nariman F, Eftekhari F, Habibi Z and Falsafi T. Anti-*Helicobacter pylori* activities of six Iranian plants. *Helicobacter* 2004; 9(2):146-151.
- [667] Al-Snafi AE. Chemical constituents, nutritional, pharmacological and therapeutic importance of *Juglans regia*- A review. *IOSR Journal of Pharmacy* 2018; 8(11): 1-21.
- [668] Atmani A, Sekhri L and Khaled B. A Comparative study of the antibacterial activity of *Juncus maritimus* Asch & Buschen; its synergic effect with some standard antibiotics and some other medicinal plants. *Research Journal of Pharmaceutical, Biological and Chemical Sciences* 2016; 7(6):6-13.
- [669] Sahli R, Rivière C, Neut C, Séron K, Samaillie J, Roumy V, Hennebelle T, Ksouri R and Sahpaz S. A phytochemical and biological study of *Juncus maritimus*, an extremophile plant from Tunisia. *Planta Med* 2015; . DOI: 10.1055/s-0035-1565365
- [670] Tóth B, Liktó-Busa E, Urbán E, Csorba A, Jakab G, Hohmann J and Vasas A. Antibacterial screening of *Juncaceae* species native to the Carpathian Basin against resistant strains and LC-MS investigation of phenanthrenes responsible for the effect. *Fitoterapia*. 2016;115:69-73.
- [671] Sela F, Karapandzova M, Stefkov G, Cvetkovikj I, Trajkovska-Dokik E, Kaftandzieva A and Kulevanova S. Chemical composition and antimicrobial activity of leaves essential oil of *Juniperus communis* (Cupressaceae) grown in Republic of Macedonia. *Macedonian pharmaceutical bulletin* 2013; 59 (1,2): 23-32.
- [672] Rezvani S, Rezai MA and Mahmoodi N. Analysis and antimicrobial activity of the plant . *Juniperus communis*. *Rasayan J Chem* 2009; 2(1): 257-260.
- [673] Gliic SB, Milojevic SZ, Dimitrijevic SI, Orlovic AM and Skala DU. Antimicrobial activity of the essential oil and different fractions of *Juniperus communis* L. and a comparison with some commercial antibiotics. *Journal of Serbian Chemical Society* 2007; 72 (4): 311–320.
- [674] Gordien AY, Gray AI, Franzblau SG and Seidel V. Antimycobacterial terpenoids from *Juniperus communis* L. (Cupressaceae). *J Ethnopharmacol* 2009 Dec 10; 126(3): 500-505.
- [675] Haziri A, Faiku F, Mehmeti A, Govori S, Abazi S, Daci M, Haziri I, Bytyqi-Damoni A and Mele A. Antimicrobial properties of the essential oil of *Juniperus communis* (L.) growing wild in east part of Kosova. *American Journal of Pharmacology and Toxicology* 2013; 8 (3): 128-133.
- [676] Sati SC and Joshi S. Antibacterial potential of leaf extracts of *Juniperus communis* L. from Kumaun Himalaya *African Journal of Microbiology Research* 2010; 4 (12): 1291-1294.

- [677] Carpenter CD, O'Neill T, Picot N, Johnson JA, Robichaud GA, Webster D and Gray CA. Anti-mycobacterial natural products from the Canadian medicinal plant *Juniperus communis*. J Ethnopharmacol 2012;143(2):695-700.
- [678] Angioni A, Barra A, Russo MT, Coroneo V, Dessi S and Cabras P. Chemical composition of the essential oils of *Juniperus* from ripe and unripe berries and leaves and their antimicrobial activity. J Agric Food Chem 2003; 51: 3073-3078.
- [679] Al-Snafi AE. Medical importance of *Juniperus communis* - A review. Indo Am J P Sc 2018; 5(3): 1979-1792.
- [680] Sela F, Karapandzova M, Stefkov G, Cvetkovikj I, Trajkovska-Dokikj E, Kaftandzieva A and Kulevanova S. Chemical composition and antimicrobial activity of berry essential oil of *Juniperus oxycedrus* L. (Cupressaceae) grown wild in Republic of Macedonia. Macedonian Pharmaceutical Bulletin 2013; 59 (1, 2) : 41 - 48.
- [681] Karaman I, Sahin F, Güllüce M, Ogütçü H, Sengül M and Adigüzel A. Antimicrobial activity of aqueous and methanol extracts of *Juniperus oxycedrus* L. J Ethnopharmacol 2003;85(2-3):231-235.
- [682] Eryilmaz M, Tosun A and Tumen I. Antimicrobial activity of Some species from Pinaceae and Cupressaceae. Turk J Pharm Sci 2016; 13: 35-40.
- [683] Erturk O. Antibacterial and antifungal activity of ethanolic extracts from eleven spice plants. Biologia, Bratislava 2006; 61(3): 275-278.
- [684] Medini H, Manongiu B, Aicha N, Chekir-Ghedira L, Harzalla-Skhiri F and Khouja ML. Chemical and Antibacterial Polymorphism of *Juniperus oxycedrus* ssp. *oxycedrus* and *Juniperus oxycedrus* ssp. *macrocarpa* (Cupressaceae) Leaf Essential Oils from Tunisia. Hindawi Publishing Corporation Journal of Chemistry 2013, Article ID 389252, <http://dx.doi.org/10.1155/2013/389252>
- [685] Nawar LS and Al-Manazalawy EAM. Screening of antibacterial and antifungal activities of five medicinal plants from Saudi Arabia environment. Journal of Applied Sciences Research 2012; 8(4): 2356-2365.
- [686] Al-Snafi AE. Pharmacological and therapeutic effects of *Juniperus oxycedrus*- A review. Indo Am J P Sc 2018; 5 (4): 2198-2205.
- [687] Ahmed F, Selim MST and Shilpi JA. Antibacterial activity of *Ludwigia adscendens*. Fitoterapia 2005; 76: 473-475.
- [688] Al-Snafi AE. Constituents and pharmacological importance of *Jussiaea repens* - A review. Indo Am J P Sc 2018; 5 (4): 2206-2212.
- [689] Joung DK, Kim YH, Yang DW, So GW, Lee KH, Kwon DY, Choi JG, An BK, Ha DS and Shin DW. Antibacterial and synergistic effects of *Kochia scoparia* extracts against methicillin-resistant *Staphylococcus aureus*. African Journal of Microbiology Research 2012;. 6(10): 2449-2454.
- [690] Al-Snafi AE. A review on pharmacological activities of *Kochia scoparia*. Indo Am J P Sc 2018; 5 (4): 2213-2221.
- [691] Diab Y, Atalla K and Elbanna K. Antimicrobial screening of some Egyptian plants and active flavones from *Lagerstroemia indica* leaves. Drug Discoveries & Therapeutics 2012; 6(4):212-217.
- [692] Chandra M. Antimicrobial activity of medicinal plants against human pathogenic bacteria. International Journal of Biotechnology and Bioengineering Research 2013; 4(7): 653-658.
- [693] Ajaib M, Arooj T, Mohammed Khan K and Farid S. Phytochemical, antimicrobial and antioxidant screening of fruits, bark and leaves of *Lagerstroemia indica*. Journal of the Chemical Society of Pakistan 2016; 38(3):538-545.
- [694] Al-Snafi AE. A review on *Lagerstroemia indica*: A potential medicinal plant. IOSR Journal of Pharmacy 2019; 9(6): 36-42.
- [695] Nasrin F, Ahmad S and Kamrunnahar. Evaluation of antimicrobial, oxidant and cytotoxic activities of methanolic extracts of *Lagerstroemia speciosa* leaves and barks. Journal of Applied Pharmaceutical Sciences 2012; 2(10): 142-147.
- [696] Saraswathi VS, Kamarudheen N, Bhaskara Rao KV and Santhakumar K. Biofilm inhibition formation of clinical strains of *Pseudomonas aeruginosa* mutants, photocatalytic activity of azo dye and GC-MS analysis of leaves of *Lagerstroemia speciosa*. J Photochem Photobiol B 2017;169:148-160.
- [697] Ambujakshi HR, Surendra V, Haribabu T and Goli D. Antibacterial activity of leaves of *Lagerstroemia speciosa* (L) Pers. Journal of Pharmacy Research 2009; 2(6):1028.

- [698] Sharmin T, Rahman MS and Mohammadi H. Investigation of biological activities of the flowers of *Lagerstroemia speciosa*, the Jarul flower of Bangladesh. BMC Complement Altern Med 2018;18(1):231. doi: 10.1186/s12906-018-2286-6.
- [699] Laruan LM, Balangcod TD, Balangcod K and Patacsil M. Phytochemical and antibacterial study of *Lagerstroemia speciosa* and its ethnomedicinal importance to indigenous communities of Benguet province, Philippines. Acta Horticulturae 2014;1023(1023):137-142.
- [700] Lai KH, Darah I, Wong CT, Afifah S and Lim SH. In vitro antibacterial activity and cytotoxicity of *Lagerstroemia speciosa* bark extract. Indian J Pharm Sci 2016; 78(2): 273-277.
- [701] Al-Snafi AE. Medicinal value of *Lagerstroemia speciosa*: An updated review. International Journal of Current Pharmaceutical Research 2019; 11(5):18-26.
- [702] Al-Snafi AE. Medical benefit of *Lallemantia iberica*- A review. To Chemistry Journal 2019; 3: 128-133.
- [703] Karami L, Ghahtan N and Habibi H. Antibacterial effect of *Plantago ovate* and *Lallemantia iberica* seed extracts against some bacteria. Res Mol Med, 2017;5(3):32-36.
- [704] Mahmood S, Hayat MQ, Sadiq A, Ishtiaq S, Malik S and Ashraf M.. Antibacterial activity of *Lallemantia royleana* (Benth.) indigenous to Pakistan. Afri J Microbiol Res 2013;7 (31): 4006-4009.
- [705] Sharifi-Rad J, Hoseini-Alfatemi SM, Sharifi-Rad M and Setzer WN. Chemical composition, antifungal and antibacterial activities of essential oil from *Lallemantia royleana* (Benth. In Wall.) Benth. J Food Safety 2015; 35(1): 19-25
- [706] Behbahani BA and Imani Fooladi AA. Shirazi balangu (*Lallemantia royleana*) seed mucilage: Chemical composition, molecular weight, biological activity and its evaluation as edible coating on beefs. Int J Biol Macromol 2018; 114:882-889.
- [707] Sharifi-Rad J, Mnayer D, Roointan A, Shahri F, Ayatollahi SAM, Sharifi-Rad M, Molaei N and Sharifi-Rad M. Antibacterial activities of essential oils from Iranian medicinal plants on extended-spectrum β -lactamase-producing *Escherichia coli*. Cell Mol Biol 2016; 62 (9): 75-82.
- [708] Al-Snafi AE. Pharmacological and Therapeutic effects of *Lallemantia royleana*- A review. IOSR Journal of Pharmacy 2019; 9(6):43-50.
- [709] Barreto FS, Sousa EO, Campos AR, Costa JGM and Rodrigues FFG. Antibacterial activity of *Lantana camara* Linn and *Lantana montevidensis* Brig extracts from Cariri-Ceará, Brazil. Pharm 2010;2(1): 42-44.
- [710] Pradhan RR, Hati DK and Samal S. Pharmacognostical, phytochemical and antimicrobial studies on the leaves of *Lantana camara* Linn. Der Pharmacia Lettre 2012; 4 (6):1648-1656.
- [711] Oyedara OO. Evaluation of the *in vitro* antimicrobial activities and phytochemical compounds of the leaf extracts of *Lantana camara* Linn. MSc thesis, Department of Microbiology, Obafemi Awolowo University, 2010.
- [712] Saraf A, Quereshi S, Sharma K, Khan NA. Antimicrobial activity of *Lantana camara* L. Journal of Experimental Sciences 2011; 2(10): 50-54.
- [713] Naz R and Bano A. Phytochemical screening, antioxidants and antimicrobial potential of *Lantana camara* in different solvents. Asian Pac J Trop Dis 2013; 3(6): 480-486.
- [714] Pradeep BV, Tejaswini M, Nishal P, Pardhu G, Shylaja S and Kumar KCh. Phytochemical screening and antimicrobial activities of plant extract of *Lantana camara*. J Environ Biol 2013; 34(3):645-649.
- [715] Onywere G, Gyles P, Lewin J, Bando T, Mundell K, Bailey D and Bazuaye-Alonge P. A Jamaican study: *In vitro* comparison of the effects of *Lantana camara*, *Gouania lupuloides* and commercial mouthwashes on oral microorganisms. American Journal of Public Health Research 2016;4(4): 128-133.
- [716] Patil Shriniwas P and Kumbhar Subhash T. Antioxidant, antibacterial and cytotoxic potential of silver nanoparticles synthesized using terpenes rich extract of *Lantana camara* L. leaves. Biochem Biophys Rep 2017;10:76-81.
- [717] Al-Snafi AE. Chemical constituents and pharmacological activities of *Lantana camara*- A review. Asian J Pharm Clin Res 2019; 12(9):10-20.
- [718] Yusuf M. Phytochemical analysis and antibacterial studies of *Lawsonia inermis* leaves extract. Journal of Chemical and Pharmaceutical Research 2016; 8(3): 571-575.

- [719] Bich DH, Chung DQ, Chuong BX, Dong NT, Dam DT, Hien PV, Lo VN, Mai PD, Man PK, Nhu DT, Tap N and Toan T. Medicinal plants and animals of Vietnam. Hanoi Science and Technology Publisher 2004; II: 130-133.
- [720] Al-Snafi AE. A review on *Lawsonia inermis*: A potential medicinal plant. International Journal of Current Pharmaceutical Research 2019; 11(5):1-13.
- [721] Gulcin I, Kirecci E, Akkemik E, Topal F and Hisar O. Antioxidant, antibacterial, and anticandidal activities of an aquatic plant: duckweed (*Lemna minor* L. Lemnaceae). Turk J Biol 2010; 34: 175-188.
- [722] Almahy Dafalla HA. Antibacterial activity of methanol extracts of the leaves of *Lemna minor* against eight different bacterial species. International Journal of Pharmaceutics 2015; 5: 46-50.
- [723] Tan LP, Hamdan RH, Mohamed M, Choong SS, Chan YY and Lee SH. Antibacterial activity and toxicity of Duckweed, *Lemna minor* L. (Arales: Lemnaceae) from Malaysia. Malaysian Journal of Microbiology 2018; 14(5): 387-392. 27.
- [724] Mesmar MN and Abussaud M. The antibiotic activity of some aquatic plants and algal extract from Jordan. Qatar Univ Sci J 1991; 11: 155-160.
- [725] Mane VS, Gupta A, Pendharkar N and Shinde B. Exploration of primary metabolites from *Lemna minor* and determined its immunomodulatory and antimicrobial activity. Eur J Pharm Med Res 2017; 4(4): 384-388.
- [726] Al-Snafi AE. *Lemna minor*: Traditional uses, chemical constituents and pharmacological effects- A review. IOSR Journal of Pharmacy 2019; 9(8): 6-11.
- [727] Hussein HM. Analysis of trace heavy metals and volatile chemical compounds of *Lepidium sativum* using atomic absorption spectroscopy, gas chromatography-mass spectrometric and fourier-transform infrared spectroscopy. Research Journal of Pharmaceutical, Biological and Chemical Sciences 2016;7(4): 2529-2555.
- [728] Abuelgasim AI, Ali MI and Hassan A. Antimicrobial activities of extracts for some of medicinal plants. International Journal of Advanced and Applied Sciences 2015; 2(2): 1-5.
- [729] Abushady HM, El- Shatoury EH , Al-Shimaa SA. Antimicrobial and antioxidant properties of some selected Egyptian plants. Annals of Mechnikov Institute 2016, [www.imiamn.org.ua /journal.htm](http://www.imiamn.org.ua/journal.htm)
- [730] Bhasin P, Bansal D, Punia A and Sehrawat AR. Antimicrobial activities of *Lepidium sativum*: Medicinal plant used in folklore remedies in India. Journal of Pharmacy Research 2012;5(3):1643-1645.
- [731] Al-Snafi AE. Chemical constituents and pharmacological effects of *Lepidium sativum*- A review. International Journal of Current Pharmaceutical Research 2019; 11(6):1-10.
- [732] Abuelgasim AI, Ali MI and Hassan A. Antimicrobial activities of extracts for some of medicinal plants. International Journal of Advanced and Applied Sciences 2015; 2(2):1-5.
- [733] Tehrani MHH, Batal R, Kamalinejad M and Mahbubi A. Extraction and purification of flaxseed proteins and studying their antibacterial activities. Journal of Plant Sciences 2014; 2(1): 70-76.
- [734] Joshi Y, Garg R and Juyal D. Evaluation of synergistic antimicrobial activity of gemifloxacin with *Linum usitatissimum* seed oil. The Journal of Phytopharmacology 2014; 3(6): 384-388
- [735] Palla AH, Khan NA, Bashir S, Ur-Rehman N, Iqbal J and Gilani AH. Pharmacological basis for the medicinal use of *Linum usitatissimum* (Flaxseed) in infectious and noninfectious diarrhea. J Ethnopharmacol 2015;160:61-68.
- [736] Al-Bayati FA. Antibacterial activity of *Linum usitatissimum* L seeds and active compound detection. Raf J Sci 2007;18(2):27-36.
- [737] Ravikumar VR and Sudha T. Phytochemical and microbiological observations on *Phylla nodiflora*. IJRPC 2011; 1(2): 117-120.
- [738] Priya SE and Ravindhran R. Phytochemical analysis and antimicrobial properties of extracts from aerial parts of *Phylla nodiflora* (L) Greene. Int J Curr Microbiol App Sci 2015; 4(2):347-358.
- [739] Zare Z, Ahmed M, Sattari TN, Iranbakhsh A and Mehrabian S. Antimicrobial activity of leaf and flower extracts of *Lippia nodiflora* L. (Verbenaceae). Journal of Plant Protection Research 2012;52(4):401-403.
- [740] Al-Snafi AE. Pharmacological and therapeutic effects of *Lippia nodiflora* (*Phylla nodiflora*). IOSR Journal of Pharmacy 2019; 9(8):15-25.
- [741] Assimopoulou AN, Couladouros EA, Hepworth D, Nicolaou KC. The chemistry and biology of alkannin, shikonin, and related naphthazarin natural products. Angew Chem Int Ed Engl 1999;38:270-301.

- [742] Al-Snafi AE. Chemical constituents and pharmacological effects of *Lithospermum officinale*. IOSR Journal of Pharmacy 2019;9(8):12-21.
- [743] Menghani E, Ojha CK, Negi RS, Agarwal Y and Pareek A. Screening of Indian medicinal plants and their potentials as antimicrobial agents. Global Journal of Science Frontier Research 2011; 11(2): <http://creativecommons.org/licenses/bync/3.0/>
- [744] Jaysingrao J and Sunil CN. Evaluation of antimicrobial activity of *Luffa acutangula* (L.) Roxb. var. *amara* (Roxb.) Clarke. International Journal of Advanced Research 2013; 1(10) 323-326.
- [745] Mustarichie R, Udin LZ, Muchtaridi and Supriyatna. Identification and antibacterial activity of methanol extract of *Luffa acutangula* Roxb. Medical and Health Science Journal 2012; 12:70-77.
- [746] Torvi JR and Hunashal RD. A study on antimicrobial activity of extracts of *Luffa acutangula* var *amara* fruits. International Journal of Pharma and Biosciences 2012; 3(4): 678-685.
- [747] Al-Snafi AE. A review on *Luffa acutangula*: A potential medicinal plant. IOSR Journal of Pharmacy 2019; 9(9):56-67.
- [748] Aboh M, Okhale SE and Ibrahim K. Preliminary studies on *Luffa cylindrica*: Comparative phytochemical and antimicrobial screening of the fresh and dried aerial parts. African Journal of Microbiology Research 2012; 6(13):3088-3091.
- [749] Muthumani. P and Meera R. Phytochemical screening and anti inflammatory, bronchodilator and antimicrobial activities of the seeds of *Luffa cylindrica*. RJPBCS 2010; 1(4):11-22.
- [750] Oyetayo FL, Oyetayo VO and Ajewole V. Phytochemical proile and antibacterial properties of the seeds and leaf of the Lufa plant (*L. cylindrica*). J Pharmacol Toxicol 2007;2:586-589.
- [751] Indumathy R, Satheesh DK, Kolagani P, Sashikala GD. Antimicrobial activity of whole plant of *Lufa cylindrical* (Linn) against some common pathogenic micro-organisms. Int J Pharm Sci Drug Res 2011;3:29-31.
- [752] Al-Snafi AE. Constituents and pharmacology of *Luffa cylindrica*- A review. IOSR Journal of Pharmacy 2019; 9(9):68-79.
- [753] Fialová S, Slobodníková L, Veizerová L and GranČai D. *Lycopus europaeus*: phenolic fingerprint, antioxidant activity and antimicrobial effect on clinical *Staphylococcus aureus* strains. Natural Product Research 2015; 29(24): 2271-2274.
- [754] Gibbons S, Oluwatuyi M, Veitch NC and Gray AI. Bacterial resistance modifying agents from *Lycopus europaeus*. Phytochemistry 2003; 62(1):83-87.
- [755] Ulukanli Z, Ulukanli S, Ozbay H, Ilcim A and Tuzcu M. Antimicrobial activities of some plants from the Eastern Anatolia region of Turkey. Pharm Biol 2005; 43(4): 334-339.
- [756] Al-Snafi AE. A review on *Lycopus europaeus*: A potential medicinal plant. IOSR Journal of Pharmacy 2019; 9(7): 80-88.
- [757] Bencsik T. Comparative Histological, Phytochemical, Microbiological, and Pharmacological Characterization of Some *Lythrum salicaria* L. Populations. Ph.D. dissertation. Medical School University of Pécs, Hungary, 2014.
- [758] Becker H, Scher JM, Speakman JB and ZappJ. Bioactivity guided isolation of antimicrobial compounds from *Lythrum salicaria*. Fitoterapia 2005; 76(6): 580-584.
- [759] Manayi A, Khanavi M, Saeidnia S, Azizi E, Mahmoodpour MR, Vafi F, Malmir M, Siavashi F and Hadjiakhoondi A. Biological activity and microscopic characterization of *Lythrum salicaria* L. Daru 2013; 21(1): 61-67.
- [760] Al-Snafi AE. Chemical constituents and pharmacological effects of *Lythrum salicaria* - A review. IOSR Journal of Pharmacy 2019; 9(6): 51-59.
- [761] Hasimi N, Ertas A, Oral EV, Alkan H, Boğa M, Yılmaz MA, Yener I, Gazioğlu I, Ozaslan C, Akdeniz M and Kolak U. Chemical profile of *Malva neglecta* and *Malvella sherardiana* by Lc-MS/MS, GC/MS and their anticholinesterase, antimicrobial and antioxidant properties with aflatoxin contents. Marmara Pharmaceutical Journal 2017; 21(3): 471-484.
- [762] Keyrouz E, El Feghali PAR, Jaafar M and Nawas T. *Malva neglecta*: A natural inhibitor of bacterial growth and biofilm formation. Journal of Medicinal Plants Research 2017; 11(24):380-386.

- [763] Seyyednejad SM, Koochak H, Darabpour E and Motamedi H. A survey on *Hibiscus rosa-sinensis*, *Alcea rosea* L and *Malva neglecta* Wallr as antibacterial agents. *Asian Pacific Journal of Tropical Medicine* 2010; 3(5): 351-355.
- [764] Al-Snafi AE. Medical benefit of *Malva neglecta* - A review. *IOSR Journal of Pharmacy* 2019; 9(6): 60-67.
- [765] Prakash A. Antibacterial activity of *Mangifera indica* kernel extracts. *J Biotechnol Biomater* 2012; 2:6, <http://dx.doi.org/10.4172/2155-952X.S1.020>
- [766] Bbosa GS, Kyegombe DB, Ogwal-Okeng J, Bukonya-Ziraba R, Odyek O and Waako P. Antibacterial activity of *Mangifera indica* (L.). *Afr J Ecol* 2007; 45 (Suppl 1): 13-16.
- [767] Doughari JH and Manzara S. *In vitro* antibacterial activity of crude leaf extracts of *Mangifera indica* Linn. *African Journal of Microbiology Research* 2008; 2: 67-72.
- [768] Al-Snafi AE, Ibraheemi ZAM, Talab TA. A review on components and pharmacology of *Mangifera indica*. *International Journal of Pharmaceutical Research* 2021; 13(2): 3043- 3066.
- [769] Kahlouche-Riachi F, Djerrou Z, Ghoribi L, Djaalab I, Mansour- Djaalab H, Bensari C and Hamdi-Pacha Y. Chemical characterization and antibacterial activity of phases obtained from extracts of *Artemisia herba alba*, *Marrubium vulgare* and *Pinus pinaster*. *International Journal of Pharmacognosy and Phytochemical Research* 2015; 7(2): 270-274.
- [770] Bokaeian M, Saboori E, Saeidi S, Niazi AA, Amini-Borojeni N, Khaje H and Bazi S. Phytochemical analysis, antibacterial activity of *Marrubium vulgare* L against *Staphylococcus aureus* *in vitro*. *Zahedan Journal of Research in Medical Sciences* 2014; 16 (10): 60-64.
- [771] Zarai Z, Kadri A, Chobba IB, Mansour RB, Bekir A, Mejdoub H and Gharsallah N. The *in vitro* evaluation of antibacterial, antifungal and cytotoxic properties of *Marrubium vulgare* L essential oil grown in Tunisia. *Lipids in Health and Disease* 2011; 10(161):1-8.
- [772] Larbi K, Kaf A, Nahnouh N and Tir Touilmeddah A. The *in vitro* evaluation of antibacterial effect of *Marrubium vulgare* L leaf extract grown in Algeria. *Current Research on Biological Sciences* 2016; 1(1):13-20.
- [773] Al-Snafi AE, Al-Saedy HA, Talab TA, Majid WJ, El-Saber Batiha G, Jafari-Sales Abolfazl. The bioactive ingredients and therapeutic effects of *Marrubium vulgare* - A review. *International Journal of Biological and Pharmaceutical Sciences Archive* 2021; 1(2):9–21.
- [774] Kazemi M. Chemical composition and antimicrobial activity of essential oil of *Matricaria chamomilla*. *Bull Env Pharmacol Life Sci* 2014; 3(2):148-153.
- [775] Cinco M *et al*. A microbiological survey on the activity of a hydroalcoholic extract of chamomile. *International Journal of Crude Drug Research* 1983; 21: 145–151.
- [776] Al-Snafi AE and Hasham LF. Bioactive constituents and pharmacological importance of *Matricaria chamomilla*: A recent review. *GSC Biological and Pharmaceutical Sciences* 2023;22(2): 79–98.
- [777] Doss A, Parivuguna.V, Vijayasanthi M and Surendran S. Antibacterial evaluation and phytochemical analysis of *Medicago sativa* L. against some microbial pathogens. *Indian Journal of Science and Technology* 2011; 4(5): 550-552.
- [778] Avato P, Bucci R, Tava A, Vitali C, Rosato A, Bialy Z and Jurzysta M. Antimicrobial activity of saponins from *Medicago* sp.: Structureactivity relationship. *Phytother Res* 2006; 20(6):454-457.
- [779] Chavan SS, Jadhav RS, Khemnar KS and Tambe VB. Evaluation of antibacterial activity and phytochemical screening of *Medicago sativa* leaves. *Int J Curr Res Acad Rev* 2015; 3(5): 308-313.
- [780] Joy GS and George P. Antimicrobial screening of alfalfa (*Medicago sativa*) in various bacterial strains. *IJPDA* 2014; 2(1):65-69.
- [781] Al-Snafi AE, Khadem HS, Al-Saedy HA, Alqahtani AM, El-Saber Batiha G, Jafari-Sales Abolfazl. A review on *Medicago sativa*: A potential medicinal plant. *International Journal of Biological and Pharmaceutical Sciences Archive* 2021; 1(2):22-33.
- [782] Mladenović KG, Muruzović MZ, Stefanović OD, Vasić SM, Ljiljana and Čomić R. Antimicrobial, antioxidant and antibiofilm activity of extracts of *Melilotus officinalis* (L.) pall. *The Journal of Animal & Plant Sciences* 2016; 26(5): 1436-1444.

- [783] Al boudi H, Daood N and Mayla LM. Study of the main components of the organic matter extracted from the leaves of Syrian *Melilotus Officinal* plant using GCMS and their effects on some of pathogenic microorganisms. Tishreen University Journal for Research and Scientific Studies - Basic Sciences Series 2018; 40(5): 163-177.
- [784] Karakas FP, Yildirim A and Turker A. Biological screening of various medicinal plant extracts for antibacterial and antitumor activities. Turk J Biol 2012;36:641-652.
- [785] Al-Snafi AE. Chemical constituents and pharmacological effects of *Melilotus officinais*- A review. IOSR Journal of Pharmacy 2020; 10(1):26-36.
- [786] Kusamba C, Byamana K and Mbuyi WM. Antibacterial activity of *Mirabilis jalapa* seed powder. J Ethnopharmacol 1991;35(2):197-199.
- [787] Michalet S, Cartier G, David B, Mariotte AM, Dijoux-franca MG, Kaatz GW, *et al.* N-caffeoylphenalkylamide derivatives as bacterial efflux pump inhibitors. Bioorganic & Medicinal Chemistry Letters 2007; 17(6): 1755-1758.
- [788] Sumithra P, Varalakshmi S and Devasena K. Phytochemical analysis and antibacterial activity of *Mirabilis jalapa* flower against gastrointestinal pathogens. International Journal of Science and Research 2014; 3(12): 1167-1170.
- [789] Al-Snafi AE, Talab TA, Jabbar WM, Alqahtani AM. Chemical constituents and pharmacological activities of *Mirabilis jalapa*- A review. International Journal of Biological and Pharmaceutical Sciences Archive 2021; 1(2):34-45.
- [790] Yiemwattana I, Chaisomboon N and Jamdee K. Antibacterial and anti-inflammatory potential of *Morus alba* stem extract. Open Dent J 2018; 12: 265-274.
- [791] Jha SR and Srivastava AK. Antibacterial, antifungal and pesticidal activity of plant *Morus alba* - a novel approach in post harvest technology. International Journal of Agricultural Science and Research 2013; 3(1): 157-162.
- [792] Park KM, You JS, Lee HY, Baek NI and Hwang JK. Kuwanon G: an antibacterial agent from the root bark of *Morus alba* against oral pathogens. J Ethnopharmacol 2003; 84(2-3):181-185.
- [793] Batiha G, Al-Snafi AE, Thuwaini MM, Teibo JO, Shaheen HM, Akomolafe AP, Teibo TKA, Al-kuraishy HM, Al-Garbeeb AI, Alexiou A and Papadakis M. *Morus alba*: a comprehensive phytochemical and pharmacological review. Naunyn-Schmiedeberg's Archives of Pharmacology 2023; <https://doi.org/10.1007/s00210-023-02434-4>
- [794] Wang W, Zu Y, Fu Y and Efferth T. In vitro antioxidant and antimicrobial activity of extracts from *Morus alba* L. leaves, stems and fruits. Am J Chin Med 2012;40(2):349-356.
- [795] Malta wild plants, *Narcissus tazetta* subsp. *tazetta*, http://www.maltawildplants.com/AMRY/Narcissus_tazetta_subsp_tazetta.php
- [796] Talib WH and Mahasneh AM. Antimicrobial, cytotoxicity and phytochemical screening of Jordanian plants used in traditional medicine. Molecules 2010; 15: 1811-1824.
- [797] Al-Snafi AE. Constituents and pharmacology of *Narcissus tazetta*. IOSR Journal of Pharmacy 2020; 10(9): 44-53.
- [798] Mahdavi S, Kheyrollahi M, Sheikhlouei H and Isazadeh A. Antibacterial and antioxidant activities of *Nasturtium officinale* essential oil on food borne bacteria. The Open Microbiology Journal 2019; 13(1): 81-85.
- [799] Derhami SF, Rad MG and Mahmoudi R. Evaluation of antibacterial effects of aqueous and alcoholic extracts of *Nasturtium officinale* on some pathogenic bacteria. Medical Laboratory Journal 2016; 10(6):49-53.
- [800] Zafar R, Zahoor M, Shah A and Majid F. Determination of antioxidants and antibacterial activities, total phenolic, polyphenol and pigment contents in *Nasturtium officinale*. Pharmacologyonline 2017; 1:11-18.
- [801] Al-Snafi AE. A review on *Nasturtium officinale*: A potential medicinal plant. IOSR Journal of Pharmacy 2020; 10(9): 33-43.
- [802] Namian P, Talebi T, Germi KG *et al.* Screening of biological activities (antioxidant, antibacterial and antitumor) of *Nerium oleander* leaf and flower extracts. American J of Phytomed and Clinical Therap 2013; 1(4): 378-384.
- [803] Derwic E, Benziane Z and Boukir A. Antibacterial activity and chemical composition of the essential oil from flowers of *Nerium oleander*. Journal of Environmental, Agricultural and Food Chemistry 2010; 9(6):1074-1084.

- [804] About AS. Antimicrobial activities of aqueous and ethanolic extracts from *Nerium oleander* used in the treatment of burns infections isolates. *Journal of Pharmaceutical, Chemical and Biological Sciences* 2015; 2(4):248-258.
- [805] Minnat TR. *In vivo* and *in vitro* antibacterial assessment of *Nerium oleander* aqueous leaf extract against bacterial pathogens and its effect in treatment of wounds. *AL-Qadisiyah Journal of Vet Med Sci* 2016; 15(2):31-39.
- [806] Al-Snafi AE. Bioactive ingredients and pharmacological effects of *Nerium oleander*. *IOSR Journal of Pharmacy* 2020; 10(9): 19-32.
- [807] Ameya G, Manilal A and Merdekios B. *In vitro* antibacterial activity and phytochemical analysis of *Nicotiana tabacum* L. extracted in different organic solvents. *Open Microbiol J* 2017; 11: 352–359.
- [808] Wang H, Zhao M, Yang B and Rao YG. Identification of polyphenols in tobacco leaf and their antioxidant and antimicrobial activities. *Food Chemistry* 2008;107(4):1399-1406.
- [809] Anumudu CK, Nwachukwu MI, Obasi CC, Nwachukwu IO and Ihenetu FC. Antimicrobial activities of extracts of tobacco leaf (*Nicotiana tabacum*) and its grounded snuff (utaba) on *Candida albicans* and *Streptococcus pyogenes*. *J Trop Dis* 2019, 7:2.
- [810] Pramono A, Fauzantoro A, Hidayati IR, Hygea A, Puspita OS, Muktamiroh H, Simanjuntak K and Gozan M. *In vitro* assay of ethanolic heat reflux extract of *Nicotiana tabacum* L. var *Virginia* against nosocomial bacteria pathogen. *IOP Conf. Series: Journal of Physics: Conf. Series* 2018; 970:012021
- [811] Al-Snafi AE. Pharmacological and toxicological effects of *Nicotiana tabacum*. *World Journal of Advanced Pharmaceutical and Medical Research* 2022;3(1):6–18.
- [812] Hussain Ail, Anwar F, Sherazi STH and Przybylskmi R. Chemical composition, antioxidant and antimicrobial activities of basil (*Ocimum basilicum*) essential oils depends on seasonal variations. *Food Cheistry* 2008; 108: 986-995.
- [813] Thongchai T, Jakkrit J, Nutthapol M and Waya S P. Major Compounds from *Ocimum basilicum* L. and their antimicrobial activity against methicillin-resistant *Staphylococcus aureus*. *Biomed J Sci & Tech Res* 2018; 3(3): 3315-3323.
- [814] Silva VA, Sousa JP, Guerra FQS and Pessoa H. Antibacterial activity of *Ocimum basilicum* essential oil and linalool on bacterial isolates of clinical importance. *International Journal of Pharmacognosy and Phytochemical Res* 2015; 7(6); 1066-1071.
- [815] Khan I, Ahmad K, Khalil AT, Khan J, Khan YA, Saqib MS, Umar MN and Ahmad H. Evaluation of antileishmanial, antibacterial and brine shrimp cytotoxic potential of crude methanolic extract of herb *Ocimum basilicum* (Lamiaceae). *J Tradit Chin Med* 2015; 35(3):316-322.
- [816] Al-Snafi AE. Chemical constituents and pharmacological effects of *Ocimum basilicum*- A review. *International Journal of Pharmaceutical Research* 2021; 13(2): 2997-3013.
- [817] Citolu G and Altanlar N. Antimicrobial activity of some plants used in folk medicine. *J Fac Pharm, Ankara* 2003; 32(3): 159-163.
- [818] Orhan DD, Ozcelik B, Hosbas S and Vural M. Assessment of antioxidant, antibacterial, antimycobacterial, and antifungal activities of some plants used as folk remedies in Turkey against dermatophytes and yeast-like fungi. *Turk J Biol* 2012; 36: 672-686.
- [819] Al-Snafi AE. The traditional uses, constituents and pharmacological effects of *Ononis spinosa*. *IOSR Journal of Pharmacy* 2020; 10(2):53-59.
- [820] Zare K, Nazemyeh H, Lotfipour F, Farabi S, Ghiamirad M and Barzegari A. Antibacterial activity and total phenolic content of the *Onopordon acanthium* L. seeds. *Pharmaceutical sciences* 2014;20(1):6-11.
- [821] Al-Snafi AE. Constituents and pharmacology of *Onopordum acanthium*. *IOSR Journal of Pharmacy* 2020; 10(3):7-14.
- [822] Rajamalar, P., Kavisri M., Elangovan. Chemical characterization of *Orchis mascula* and its antibacterial efficiency against clinical isolated human pathogenic bacteria. *Biomass Conv Bioref* 2022. <https://doi.org/10.1007/s13399-022-03022-x>
- [823] Al-Snafi AE. Pharmacological potential of *Orchis mascula*- A review. *IOSR Journal of Pharmacy* 2020;10(3):1-6.

- [824] Ammar NM, Abou El-Kassem LT, El-Sayed NH, Calabria LM and Mabry TJ. Flavonoid constituents and antimicrobial activity of date (*Phoenix dactylifera* L.) seeds growing in Egypt. *Medicinal and Aromatic plant Science and Biotechnology* 2009;3(special issue 1):1-5.
- [825] Saddiq AA and Bawazir AE. Antimicrobial activity of date palm (*Phoenix dactylifera*) pits extracts and its role in reducing the side effect of methyl prednisolone on some neurotransmitter content in the brain, hormone testosterone in adulthood. *Proc 4th Int Date Palm Conference. Acta Hort* 882, ISHS, 2010.
- [826] Metoui M, Essid A, Bouzoumita A and Ferchichi A. Chemical composition, antioxidant and antibacterial activity of Tunisian date palm seed. *Pol J Environ Stud* 2019;28(1):267-274.
- [827] Samad MA, Hashim SH, Simarani K and Yaacob JS. Antibacterial properties and effects of fruit chilling and extract storage on antioxidant activity, total phenolic and anthocyanin content of four date palm (*Phoenix dactylifera*) cultivars. *Molecules* 2016;21(4):419.
- [828] Al-Snafi AE, Thuwaini MM. *Phoenix dactylifera*: traditional uses, chemical constituents, nutritional benefit and therapeutic effects. *Traditional Medicine Research* 2023;8(4):20. <https://doi.org/10.53388/TMR20221110001>
- [829] Bhatti MZ, Ali A, Saeed A, Saeed A and Malik SA. Antimicrobial, antitumor and brine shrimp lethality assay of *Ranunculus arvensis* L. extracts. *Pak J Pharm Sci* 2015;28(3):945-949.
- [830] Al-Snafi AE. Pharmacological and toxicological effects of the *Ranunculus* species (*Ranunculus arvensis* and *Ranunculus sceleratus*) grown in Iraq. *International Journal of Biological and Pharmaceutical Sciences Archive* 2022; 3(2): 1–9.
- [831] Solanki S and Prasad D. Therapeutic investigation of antimicrobial properties of *Withania somnifera*, *Terminalia arjuna*, *Bacopa monnieri*, *Ranunculus sceleratus* and *Acalypha indica*. *PalArch's Journal of Archaeology of Egypt / Egyptology* 2021; 17(6): 10017-10037.
- [832] Jafari-Sales A, Bagherizadeh Y, Malekzadeh P, Ahmadi B and Bonab FR. Evaluation of the antimicrobial effects of essential oil of *Reseda lutea* L. on pathogenic bacteria: *Staphylococcus aureus*, *Staphylococcus epidermidis*, and *Escherichia coli*. *Archives of Clinical Microbiology* 2017;8(3):41-45.
- [833] Kumarasamy Y, Cox PJ, Jaspars M, Nahar L and Sarker SD. Screening seeds of Scottish plants for antibacterial activity. *J Ethnopharmacol* 2002;83(1-2):73-77.
- [834] Moghaddam NS, Eryilmaz M, Altanlar N and Yıldırım O. Antimicrobial screening of some selected Turkish medicinal plants. *Pak J Pharm Sci* 2019; 32(3):947-951.
- [835] Al-Snafi AE. Constituents and biological effects of *Reseda lutea* and *Reseda odorata* grown in Iraq. *International Journal of Biological and Pharmaceutical Sciences Archive* 2022; 3(1): 56–63.